

FUNK

AMATEUR

SONDERAUSGABE/SPECIAL EDITION

WORLD RADIOSPORT TEAM CHAMPIONSHIP

JESSEN/WITTENBERG, GERMANY

JULY 12–16, 2018

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Including the biography of the
new World Champion

Time schedule for the WRTC 2018 in July 2018

All times are local Central European Daylight Saving Time.

Weekday	Date	Start	End	Event	Location
Wednesday	11. 07. 2018			Official arrival day for all participants	
Wednesday	11. 07. 2018	08:00	21:00	Registration (Competitors, Referees, Judges)	HQ Hotel
Wednesday	11. 07. 2018	10:00	19:00	Sponsor Exhibition	HQ Hotel
Wednesday	11. 07. 2018	18:00	20:00	Dinner	HQ Hotel
Wednesday	11. 07. 2018	20:00	22:00	Ham Widows' Ball (sponsored by the YASME Foundation)	Lutherhaus Refektorium
Thursday	12. 07. 2018	07:00	08:00	Breakfast	HQ Hotel
Thursday	12. 07. 2018	08:00	09:00	Meeting Competitors / Referees	HQ Hotel
Thursday	12. 07. 2018	09:00	10:00	Meeting Referees	HQ Hotel
Thursday	12. 07. 2018	10:00	18:00	Sponsor Exhibition	HQ Hotel
Thursday	12. 07. 2018	10:00	18:00	Sightseeing Leipzig	
Thursday	12. 07. 2018	19:00	23:00	Opening Ceremony & Dinner	Exerzierhalle/ Stadthaus
Friday	13. 07. 2018	07:00	08:00	Breakfast	HQ Hotel
Friday	13. 07. 2018	08:00	09:00	Meeting Competitors / Referees	HQ Hotel
Friday	13. 07. 2018	09:00	11:00	Station Draw	HQ Hotel
Friday	13. 07. 2018	10:00	19:00	Sponsor Exhibition	HQ Hotel
Friday	13. 07. 2018	10:00	12:00	Sightseeing Wittenberg	
Friday	13. 07. 2018	10:30	15:00	Sightseeing Dübener Heide	
Friday	13. 07. 2018	13:00	18:00	Station setup	Sites
Friday	13. 07. 2018	19:00	21:00	Dinner (Buffet)	HQ Hotel
Saturday	14. 07. 2018	06:00	07:30	Breakfast "To Go" for Competitors & Referees	HQ Hotel
Saturday	14. 07. 2018	07:30		Departure to locations (Competitors & Referees)	Sites
Saturday	14. 07. 2018	08:00	15:00	Sponsor Exhibition	HQ Hotel
Saturday	14. 07. 2018	10:00	12:00	Sightseeing Wittenberg	
Saturday	14. 07. 2018	08:30	18:30	Sightseeing Dresden	
Saturday	14. 07. 2018	14:00		WRTC Competition starts	
Saturday	14. 07. 2018	15:30	16:30	Meeting of the Sponsors	HQ Hotel
Saturday	14. 07. 2018	16:00	18:00	Soccer World Cup 3rd place final	HQ Hotel
Sunday	15. 07. 2018	10:00	15:30	Sightseeing Wörlitzer Park	
Sunday	15. 07. 2018		14:00	WRTC Competition ends	
Sunday	15. 07. 2018	15:00	17:00	Return from locations	
Sunday	15. 07. 2018	16:00	23:59	Checking of logs	HQ Hotel
Sunday	15. 07. 2018	17:00	19:00	Soccer World Cup Final	HQ Hotel
Monday	16. 07. 2018	00:00	18:00	Checking of logs	HQ Hotel
Monday	16. 07. 2018	07:00	09:00	Breakfast	HQ Hotel
Monday	16. 07. 2018	10:00	12:00	Sightseeing Wittenberg	
Monday	16. 07. 2018	10:00	18:00	Sightseeing Berlin	
Monday	16. 07. 2018	19:00		Closing ceremony + award dinner	Exerzierhalle/ Stadthaus
Tuesday	17. 07. 2018	06:00	09:00	Breakfast	HQ Hotel
Tuesday	17. 07. 2018			Official departure day for all participants	

WRTC 2018 – The Final Countdown

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How fast time flies. Nowhere does that become more obvious than in a such a major project as the WRTC. To start with it seems like you have all the time in the world but then in the last four weeks each day needs to have 36 hours in it! Writing this editorial sets one of the last milestones in the journey, which has been more than 1400 days long. Just four years ago we (DL1MGB and DL6MHW) sat at the camping site in Friedrichshafen, discussing the upcoming WRTC 2014 and our initial ideas for a WRTC in Germany. Maybe a few beers were involved as well. Three weeks later the Germans came back from Boston full of inspiration and a paper with 12 signatures: The “Declaration of Boston”. Soon, it became clear that there should be a WRTC in Germany in 2018. After a short chat over Google Drive, we resolved the final problem:

DL6MHW: *we have a team, we have the motivation, we are still looking for a project manager, we'd like to ask you, Chris*

DL1MGB: *do ask*

DL6MHW: *would you lead the German WRTC 2018 project*

DL1MGB: *yes, I will*

Days, weeks, months, years passed, filled with lots of work. Recently, we both stated that there was no time that we regretted taking up the lead positions in the team. There were a few lows and some drawn out discussions about less important issues but there was also steady progress and eventually very few serious problems remained. Money came, contesters worked to get the required qualifying positions to be able to attend, all needed technology was evaluated. Overall the biggest challenge was in communicating what we were doing and finding people to help. We had a network, or to be more correct, two overlapping networks (one led by DL1MGB, one by DL6MHW) of hams who immediately supported the project with hundreds of hours of their time. You soon run out of additional friends to support you and your ideas however then you meet people you have never met before who are eager to help. You start to regret that you hadn't met them earlier in your life – not just as enthusiastic workers and organizers but also as great companions.

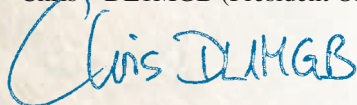
Without any doubt the organizers of the WRTC 2014 set high standards and we had big shoes to fill, demonstrated, not in the least by an excellent movie by 9V1YC. They also made sure that we never ran short of help or motivating words. Wherever the WRTC 2022 will take place, we are more than happy to pass on our help and knowledge to the future organizers.

What would such an event be without the people behind it? NOTHING. We are not only very proud of the more than 20 members of the organizing committee, who followed us over the last four years. It's also hard to find enough positive words to describe the willingness of more than 300 well trained and highly motivated volunteers, who will make this event a success and a unique experience for all.

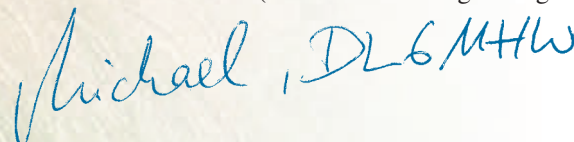
We want to invite you to celebrate the grand finale of a fascinating 4 years' adventure.

Welcome to Germany! and
Ein Herzliches Willkommen zur WRTC 2018!

Chris – DL1MGB (President Organizing Committee)



Michael – DL6MHW (Vice-President Organizing Committee)



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Edited by WRTC "World Radiosport Team Championship" 2018 e.V.
Editor Michael Höding, DL6MHW

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Greetings to the WRTC 2018

Dear participants,
dear guests,

The 2018 Radio Amateur's World Championship is one of a series of very different and high-class competitions to be held in Saxony-Anhalt this year. I am very pleased that this series is enriched by the amateur radio sport with their passion for technology. Particularly noteworthy here is the commitment of volunteers as well as the sponsors, without whom an international event like this, with its 200 guests would be inconceivable.

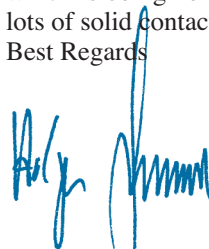


Holger Stahlknecht

This again shows that volunteering is a pillar of our society. My thanks to the organizers of the WRTC 2018 and the DARC local clubs in Jessen and Wittenberg. I acknowledge the clubs for their role inspiring people for so many years, winning many people over to their cause and through this promoting the city, the county and our country.

So I invite the guests to get to know our country and people. For the participants in the Radio Amateurs World Championship, which is being held for the first time in Germany, I wish you lots of solid contacts and a fair competition!

Best Regards

A handwritten signature in blue ink, appearing to read 'Holger Stahlknecht'.

Holger Stahlknecht
Minister of Interior and Sport for Saxony-Anhalt

Greetings to the World Radio Teamsport Championship

Dear sportsmen and women,
dear guests,



Photo: Marko Schoeneberg

Torsten Zugehör

words are not always enough to understand one another – it needs a connection. As radio operators, you are not only pioneers of new technology but also leaders in a limitless global understanding. In a time of fake news, hostility and insulting words, the short-wave connection makes a decisive contribution to international friendship. It is nice that this unique sport of radio works against silence and brings people closer to each other.

Welcome to the WRTC in Lutherstadt Wittenberg. At the birthplace of the Reformation, not only are UNESCO World Heritage sites awaiting discovery, with the Wittenberg University of Leucorea and its leaders, the city has an impressive academic legacy. Wilhelm Weber as a son of our city and inventor of electrical telegraphy acts as a model for today's radio sport. The Lutherstadt is at the same time the source of many innovative contacts.

You will see that the Lutherstadt Wittenberg and the county surrounding furnish an excellent technical environment. The terrain provides optimal conditions for hosting the first radio World Championship to be held in Germany between the rivers Elbe and Elster. In the middle of nature, surrounded by the biosphere reserve Middle Elbe and the Fläming. Undulating but in no way boring, the land is at the same time an impressive setting.

In this respect, I wish all teams a fair competition and an interesting stay in the HQ town of Wittenberg. My respect and special thanks go to the organizers of the WRTC 2018 e.V. Jessen / Wittenberg and the numerous supporters who work with passion and tireless commitment to create the first World Radiosport Team Championship in Germany!

In this respect I now say “over and out”.

Torsten Zugehör
Lord Mayor of Lutherstadt Wittenberg

Dear competitors of the
Amateur Radio World Championship,



Michael Jahn

It is with great pleasure that I welcome so many radio operators from countries in different continents to our city – Welcome! Our small town of Jessen on the Schwarze Elster river is located in tranquil nature and is characterized by its agricultural industry.

More than 14,000 inhabitants live in 44 districts over an area of 352 km² – making this the 11th. largest city in Germany. We are at the connection of the three-state borders

of Brandenburg, Saxony and Saxony-Anhalt. As a city of music and wine, we celebrate all kinds of cultural traditions, love sports and partying. Although we didn't know it, radio operators from the Jessen / Herzberg radio club have made our city known throughout the world. In many contests, the operators have made thousands of contacts over decades, won the German Shortwave Cup several times as well as international contests. Jessen personalities, such as Oskar Radwan (DL3OF), Olaf Taesch (DJ7TO) and Andreas Winter (DK4WA), have done a great job, through their passion in the art of radio communications. After the world championship in dog sport, we can now enjoy hosting the Radio Amateurs World Championship in Jessen.

The area is predestined for this contest due to the very flat landscape, which makes competition between sites fair. This was an essential factor for the selection of Jessen as the host region.

The participating radio stations are distributed on numerous spots around Jessen – as well as in the Elbe-Elster area or near Jüterbog. Many agricultural cooperatives have supported the project by providing suitable sites for the radio stations. We are proud that the WRTC appreciates this congeniality. After all, it is a sign that simply working together is still being practiced in our Eastern part of Germany, instead of being dominated by hostility to technology or other aversions.

The over 300 volunteers and 200 participants will experience this spirit and get to know the hospitality of the region. In the region where Martin Luther gave his sermons in the churches 500 years ago, we hope to convey a historical impression of the Lutherstadt Wittenberg. We are sure many of you will return here after the World Championship to visit the museums in Wittenberg and the school and regional festival in Jessen.

The citizens of the city of Jessen are proud of this World Championship. Our thanks go to the Jessen radio operators who have brought the event here. The organizers have performed a tremendous amount of preparation work. We respect and recognise those efforts. We wish the participants an exciting sporting contest, good contacts – also with the locals – and at the same time – enjoy your hobby.

Michael Jahn – Mayor of Jessen (Elster)

Greetings from DARC

The world as our guest in Germany



Steffen Schöppe

The World Radiosport Team Championship is to take place for the first time in Germany. Here, the “Best of the Best” radio amateurs compete in a 24-hour radio competition. Roughly speaking, the aim is to make as many radio contacts with as many countries as possible in the given time. When Michael Höding came to me with the idea of organizing a WRTC in Germany a few years ago, not knowing how much work it would be,

I enthusiastically said “Do it”. At first, I could not tell how much work was involved in the event organization. Although I am not involved at a detailed level, I know from other major events the associated effort.

We are fortunate that the organizing team includes amateurs who have often participated in this event. They know therefore where they need to pay particular attention but also that not everything can be planned in advance.

For this reason, my highest respect and heartfelt thanks go to all who are involved in shaping this major event. No matter if they are volunteer helpers at the 63 competition station sites, those who sourced and processed materials over countless hours and days in advance, or those who have organized the smooth running of the event in the background. Every one of you have been and still are essential and I am delighted to hear every day about your enthusiasm for the event.

At WRTC 2018 participants come from all parts of the world. They have qualified over several rounds to get to this event, taking a lot of their time and money to be able to come to Germany. As Chairman of the German Amateur Radio Club I warmly welcome all participants and guests of the WRTC 2018 to Saxony-Anhalt.

I wish all competitors good propagation conditions, a good ear and lots of success in the competition. To the helpers, guests and spectators, I wish a nice stay in the region, good weather and many interesting conversations with the participants before the start of the competition.

Best Regards (or as we say to radio amateurs) '73 de

Steffen Schöppe, DL7ATE – Chairman of the DARC e. V.

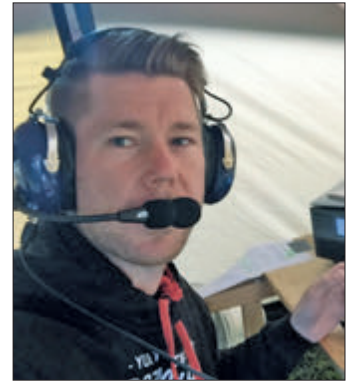
Dear Amateur Radio friends,

from the 12th. to the 16th. of June 2018, the WRTC 2018 e.V. (World Radiosport Team Championship 2018) will host the Amateur Radio World Championship. In addition to the 63 participants, many family members are expected at the venues. The team supervisors are mainly members of the DARC e.V. Since the WRTC takes place to coincide with the IARU 2018 HF Championship Contest, all radio amateurs have the opportunity to benefit from the excitement on the bands.

It's going to be a big event. An event that connects young and old. The event is organised completely by volunteers and helpers. We thank all involved for this outstanding commitment.

Contests are great events! They offer the opportunity to compete in a sport and uphold the principles of fair play as well as providing the chance to make new friends. Radio-sport brings people together, integrating and connecting across generations.

We wish all participants success, fun and a full logbook.



Ronny Jerke



Stefan Seifert

Ronny Jerke (DG2RON)
district chairman of DARC e.V. in Brandenburg

Stefan Seifert (DL4ST)
district chairman of the DARC e. in Saxony-Anhalt

Twentyeight successful years – WRTC from 1990 to Now

Ward Silver – NOAX, Founding Member, WRTC 1990 Committee

As we approach the eighth World Radiosport Team Championship, we should look back and ask, “How did this come to be? What were the important steps?” We must also look forward, understanding how the WRTC works today and how to secure sponsors for future events. A full description of the WRTCs history will not be made here – the World Radiosport Team Championship website (wrtc.info) includes many details, scores, and photos from previous WRTC events. A list of resources about WRTC is given below but there are many more that can be found through searching the Internet. This article will look back at some of the organizational details and key elements.

WRTC is Born

Contesting, particularly DX contesting, has always been understood to depend on geography. For every contest, there are regions and locations that have advantages due to the scoring system and propagation. Located in the far northwest corner of the United States, the Seattle hams knew this well. Danny Eskenazi K7SS, suggested what seemed to be impossible, “What if all of



From the beginning international friendship in 1990: IK2DVG, UA0CA, K1DG RW0CN Source: wrtc.info

the contesters operated from the same area?” and it remained a pipe dream for a long time. Then it was announced that the Goodwill Games, first held in 1986 in Moscow, would be coming to Seattle in 1990. (en.wikipedia.org/wiki/1990_Goodwill_Games) Could amateur radio be included in the games? Not directly, but could a parallel ham radio event be held mirroring the international characteristics of the Goodwill Games? Why not give it a try? Danny assembled a team, including the author, and planning began.

Holding an international ham radio event at the same time as the Goodwill Games, which included athletes from 54 countries and occupied facilities in four major Washington cities, proved to be a challenge. At the time, there were still severe restrictions on travel for hams in Eastern Europe and the Soviet Union – many of them had not traveled abroad before and certainly not to the United States. Nevertheless, almost all of the difficulties were overcome. A particularly enjoyable aspect was that the 22 teams from 15 countries were hosted by local families during WRTC creating many warm friendships that continue today.

As with all WRTCs, there were certain difficulties and experiments. For example, in 1990 the 1-by-1 special call signs were not yet available so randomly selected calls from the various station hosts were used by the teams. There was no qualification process – teams were invited by the organizing committee. The equipment, provided by Seattle-area Icom America, consisted of a main transceiver connected to the host's antennas and a lis-

ten-only radio with 100 feet of wire. Stations varied from modest stations with a tribander and wires to large contest stations with stacked monobanders sprinkled around Western Washington's wildly varying hills and islands. Each host served as a referee and a travelling committee of judges visited each station during the contest. Station hosts keyboarded in the paper logs to logging software as each log sheet was completed. And speaking of contests, the 10-hour 1990 contest created specially for WRTC took place on a Friday instead of the usual weekend. Would anyone besides the teams be on the air? Yes! Hundreds of QSOs were made and the bands were full of activity. As soon as floppy disks with the files were brought to contest headquarters, the logs were checked and winners announced at the closing banquet, held at a Native American village hall on Blake Island, offshore from Seattle.

The one final difficulty to be overcome which almost derailed the contest involved teams from behind the Iron Curtain – they had no official operating permission! Many phone calls, letters, and faxes (no email in 1990!) were exchanged with the FCC until with 10 days to go, a fax was received giving those teams permission to use specific calls from the list of WRTC committee members. Without that permission, WRTC 1990 might have turned out quite differently! As we learned over the years, there are always a few such problems to be solved in the very late stages of putting on the event. Each sponsoring group has done a wonderful job in solving every difficulty and putting on a great event. We all walked away from the first WRTC with our hearts full of joy at bringing so many of our friends together, many meeting for the very first time after hundreds of QSOs. But we wondered if there would be another WRTC. As it turns out, there were no further Goodwill Games, but WRTC persevered and six years later the second event was held in San Francisco. WRTC was on its way!

What Has Changed in WRTC?

The second WRTC stood completely on its own as an amateur radio event, one hundred percent. The two-operator team format stayed the same as it has to the present day and 1x1 calls from the new special call program were used. Stations were much more equally situated around sea-level plains between the coastal range of mountains and San Francisco Bay. The basic station structure used today was put in place, as well, with a tribander at 30-40 feet, wires for the low bands, and a 100-watt power limit. Instead of creating a special contest, it was decided to “piggyback” the WRTC contest onto the IARU HF Championship with special scoring performed by the host log-checking committee. This guaranteed plenty of activity and IARU continues to be the “host contest” of WRTC.



DJ6QT and DL5XX – one German team in Seattle Photo: DJ6QT

Another change from Seattle was for all of the teams to stay at a single site for the entire event. WRTC took over a small hotel just south of the San Francisco airport for the week. While the family flavor of local hosts was wonderful, having everyone in the same place solved a lot of logistical problems and paid benefits of its own. There is nothing like sitting around a courtyard into the night sharing cold drinks with your friends! We all got to know each other quite well and many plans were created for future operations. The teams from Japan hosted an Asian foods buffet and the Slovenians threw an enormous pizza party on the last day as a way of inviting WRTC to their country four years later.

In 2000, WRTC moved to Europe for the first time. Slovenia, first of the new Balkan states to obtain its independence, threw a ham radio party. Once again, everyone stayed together in the picturesque resort town of Bled. Operating took place at host stations spread across the country in excellent locations on hilltops. Each station used identical antennas this time. A qualification process began to emerge but the biggest changes were including PC-based “pileup contests” as part of the overall score and the use of special calls using an S-three digits-single letter format, specially selected to be equal in length and difficulty of use.

With the solar maximum approaching, the Finns stepped up to host the next WRTC in 2002, expecting good conditions at their high latitudes. Finland takes maximum advantage of the northern summer and we spent the preparatory days at summer camp learning about sauna and fresh air. Qualification based on published contest scores became part of the event for the first time. Computer logging was now required and referees used text messaging to send team scores to WRTC HQ every hour where they were published on a website that anyone could view as the contest progressed.

WRTC crossed the equator in 2006 to the island of Florianópolis in Brazil's PY5 district. Instead of mid-summer, July is mid-winter there but still very comfortable to the northern contesters. Two big changes were made to WRTC for 2006 – a public operator qualification system and amplifiers. Operator rating systems had been proposed before but the Brazilians took it to a new level, based on published scores of major contests over a two-year period. Each category and contest received its own weighting, resulting in a final ranking that determined Team Leaders, who then picked a teammate. This process has been modified but the basic format is still used. Amplifiers were provided due to the long distances between Brazil and the population centers of North America, Europe, and Japan. They were needed in Brazil although subsequent WRTCs have not found them to be necessary.

In 2010, WRTC returned to Europe, hosted by the Russians in the vicinity of Moscow. The sponsors made an enormous effort to provide the most equal operating positions in the open plains around Moscow. Each station was set up “Field Day style” based on the well-tested Russian Radiosport Team Championship (RRTC) competitions. This approach clearly worked quite well and is recommended for future WRTC events as it is used this year in Germany. Each operator was also permitted to transmit in order to interleave QSOs in a multi-single format that made the most use of the antenna system. The operator qualification and selection process continued to mature. WRTC 2010 was the first conducted in accordance with a fixed set of WRTC Requirements and Guidelines that continue to apply to current and future WRTC events.

After 18 years, WRTC 2014 returned to North American in Boston, MA. The biggest change this time was to use a multi-two format in which both operators could transmit at any time. This really increased activity on the air with the special 1x1 call signs everywhere on the bands. Stations were distributed all around eastern Massachusetts in a variety of locations and cir-

cumstances. WRTC 2014 was the largest yet with 59 teams from 29 regions competing. Site evaluation software (HFTA) was used to verify that all sites were suitable, including noise



Very young contesters in Brazil 2006: N2NL, K3LR, KM3T, VE3EJ, K1DG, N6MJ, N2NT, N6AN, K5ZD, N0AX, AG9A, N2NC, K1KI, N2IC

Photo: K1DG



WRTC 2010 – Fieldday Style

Source: wrtc2014.com

surveys and a number of on-site improvements or modifications. The site selection process was published as a paper available on the event's website (www.wrtc2014.org).

How are WRTC Committees Chosen?

The process of choosing a WRTC host is administered by the WRTC Sanctioning Committee (WRTC-SC) which is responsible for selecting and authorizing a sponsor for a future WRTC. The WRTC-SC consists of members from each of the previous WRTC events, all the way back to 1990. The current President is Tine Brajnik S50A and the current Secretary is your author. The process usually begins with informal discussions that are then followed by a letter of intent to the WRTC-SC by a potential sponsoring group.



Opening ceremony of WRTC 2014 Photo: DL6MHW

The WRTC-SC provides the Requirements and Guidelines document that lets the sponsors know what is expected of them. Some requirements are firm but there is enough flexibility to allow for innovation in technology, team selection, and scoring. Assuming the sponsors agree with these expectations, further conversations take place regarding organization, financing, and similar administrative concerns. This helps both the WRTC-SC and the sponsors plan for and understand the challenges of hosting WRTC as early as possible. If there is more than one group applying to host WRTC, it is then up to the WRTC-SC to select

the best-qualified group. The selection is usually announced at the closing ceremony of the current WRTC.

Once the announcement is made and planning begins for the next WRTC, it is largely left up to the sponsoring group to manage the event. There are always questions about rules, qualification, finances, and so forth. The members of the WRTC-SC are glad to assist the new sponsors with the information and lessons they learned hosting their own WRTC events. Questions about new operating rules are often discussed so that when announced, they have been reviewed by experienced event sponsors. The WRTC-SC is there to help, not to run the event behind the scenes, and we greatly appreciate the contributions of its members, supporting WRTC long after their events are done.

WRTC 2018 – At Last

Finally, we arrive at WRTC 2018, which will include 63 teams from around the world. Sites are distributed around the glacial plains of northeastern Germany. Special Raspberry Pi micro-

Magazine Articles about WRTC

WRTC 1990

“The World Radiosport Team Championship,” by John Crovelli, W2GD, QST, Oct 1990; “WRTC '90: An Inside Report,” by Dave Ingram, K4TWJ, CQ, Oct 1990

WRTC 1996

“Observations from WRTC '96,” by Tom Taormina, K5RC, NCJ, Nov/Dec 1996; “WRTC + K1TO + KR0Y = W6X,” by Dan Street, K1TO, NCJ, Nov/Dec 1996

WRTC 2000

“WRTC-2000: A Test of Teamwork in ‘The Green Piece of Europe’”, by Dave Sumner, K1ZZ, QST, Oct 2000

WRTC 2002

“WRTC 2002 – In the Land of the Midnight Sauna,” by Ward Silver, N0AX, QST, Oct 2002; “WRCT 2002 – They Did It Again!,” by John Dorr, K1AR, CQ, Oct 2002; “WRTC-2002 Round-Up,” by Martti Laine, OH2BH, NCJ, Jan/Feb 2003

WRTC 2006

“From Beyond the Tropics – WRTC 2006,” by Ward Silver, N0AX, QST, Oct 2006; “Some Reflections on WRTC 2006 – Part 1 and Part 2,” by Dean Straw, N6BV, NCJ, Nov/Dec 2006 and Jan/Feb 2007

WRTC 2010

“WRTC 2010 – One Team's Story,” by Dan Craig, N6MJ, NCJ, Nov/Dec 2010; “WRTC 2010 Wrapup,” by Al Dewey, K0AD, NCJ, Nov/Dec 2010

WRTC 2014

“World Radiosport Team Championship – WRTC 2014,” by Randy Thompson, K5ZD, QST, Nov 2014; “WRTC 2014 Analysis: Site Selection,” by Rich Assarabowski, K1CC, NCJ, Sep/Oct 2014 (Search the ARRL Archive of QST and NCJ for “WRTC” and “World Radiosport Team Championship” – many small articles and notes are available.)

General Coverage of WRTC

“Contact Sport: A Story of Champions, Airwaves, and a One-Day Race around the World,” by Jim George, N3BB, Greenleaf Book Group, 2016

“The Evolution of the World Radiosport Team Championships,” by Dave Patton, NT1N, QST, May 2002

“Three Cycles of Perspective on WRTC,” by Martti Laine, OH2BH, NCJ, Jul/Aug 2002

“Post, Present and Future of the WRTC Concept,” by Martti Laine, OH2BH, NCJ, Jul/Aug 2002

“A History of WRTC,” (author not given), NCJ, Jul/Aug 2006

Table 1 – WRTC Events

Year	Location	Website	Notable Innovations
1990	Seattle, WA	Web not invented yet!	Held during Goodwill Games, unique contest
1996	San Francisco, CA	www.k6xx.com/radio/wrtc/wrtc96.html	First WRTC during IARU HF Championship
2000	Bled, Slovenia	1	First WRTC in EU, Olympic-style event
2002	Helsinki, Finland	wrtc.info/wrtc-sites/wrtc2002.org	Scores submitted by referees using text messaging
2006	Florianopolis, Brazil	1,2	First WRTC in SA, 1 kW power level
2010	Moscow, Russia	1,3	Grouped, highly equal sites in RRTC format
2014	Boston, MA	www.wrtc2014.org	Multi-two-style operation, automatic score reporting

¹ see wrtc.info for archived material from all WRTC competitions

² Use the Internet Wayback Machine (archive.org/web) to search for www.wrtc2006.com/site/home.asp snapshots from Aug 2006

³ Use the Internet Wayback Machine (archive.org/web) to search for www.wrtc2010.ru snapshots from July 2010

computers will be part of each station, transmitting score information to WRTC HQ in real time for display on the public website – the first WRTC to fully implement an automatic scoreboard. Travel plans have been made and detailed questions about the rules are being answered. The event must be nearly here!

As a founding member of that first WRTC, I marvel that nearly 30 years later, WRTC is alive and well – the “Olympics of Ham Radio” as it is often described. Remembering its beginnings with paper logs and receiving wires and before the internet, it is very gratifying to see how it has changed and progressed. Many contesters now begin operating with a goal of participating in the WRTC someday. This is good for radiosport and good for amateur radio. I know I can speak for all of the WRTC founders that we are grateful to all of the committee members who have given so much to amateur radio through WRTC. Thank you, hvala, kiitos, obrigado, spacibo, and vielen dank!

The WRTC 2018 Site Selection Process

Ulrich Weiss – DJ2YA

After a 3-year qualification period in their own regions the teams are eager to compare their contesting skills with competitors coming from all over the world to the WRTC 2018. They expect an infrastructure from the organizers that provides all competitors an equal chance. A “level playing field”. Providing identical facilities with high quality antennas, acceptable housing and a reliable generator is mainly a matter of funding. The most decisive element in the equation cannot be simply purchased. It is the quality of the actual station locations which is determined by topographical and geophysical factors of the sites that the contest hosting team offer.

Since WRTC 2010 in Moscow the problem of inequality between sites have been addressed by running the WRTC field day style on a sufficiently large area of suitable ground. Suitability means above all a clear shot to the horizon in all directions, a plain and unobstructed Fresnel Zone (ground reflections zone) of the necessary size and the required space to place more than 60 stations at a distance of at least 1000 meters apart. Ideally all locations should have the same ground characteristics such as conductivity and dielectric constants. Fortunately, the latter is not significantly important as almost all radiation will be horizontally polarized.

Nevertheless, when the group of German competitors and visitors enthusiastically signed the “Declaration Letter” after the WRTC 2014 (fig.1) they simply hoped that there would be a stretch of flatland in Germany that could fulfill the criteria.

Helpful Ice Ages and more

After carefully considering all the possibly suitable areas, the area around Jessen/Wittenberg was selected as it offered a host

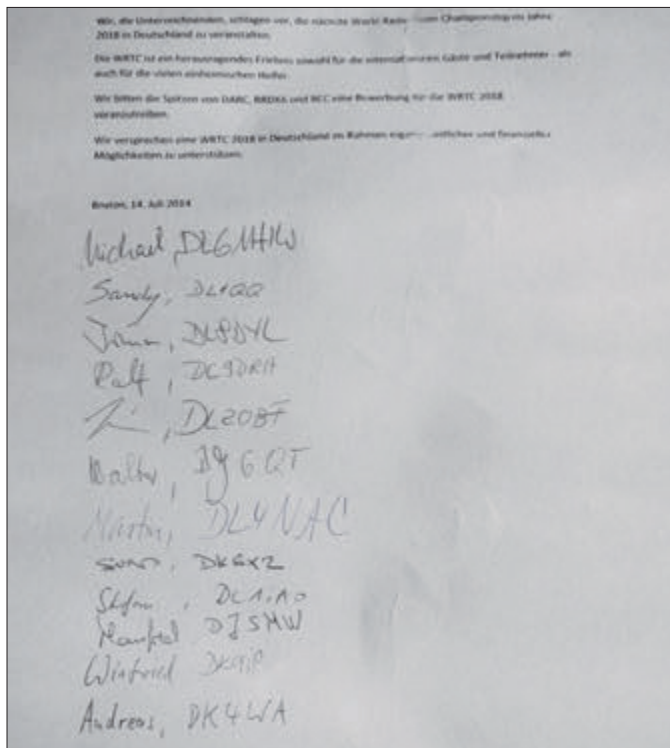


Fig. 1: German visitors to the WRTC 2014 in Boston sign a “declaration”

of advantages. A sufficiently large area of land is almost perfectly flat because it was planed flat by two ice-ages about sixty-thousand years ago. The large fields in the region are mainly used for agriculture and administered by agricultural cooperatives with boards with whom we would have to negotiate. The area boasts an active ham community that will provide a large part of the required man power for the event. Finally, the relatively short distances to touristic magnets such as Berlin, Dresden and Leipzig are attractive for visitors, not forgetting the town of Wittenberg itself as the cradle of the Reformation led by Martin Luther.

After the decision to use the Jessen/Wittenberg area Andy, DK4WA, and Frank, DM5WF, as long-term residents of the region, were predestined for the task of convincing landowners and the heads of agricultural companies about the opportunity to bring their fields world-wide recognition. Andy and especially Frank travelled hundreds of kilometers and spent countless hours to negotiate and present good arguments convincingly until they could proudly register more than 160 potential locations into the dedicated ZSV database for WRTC-sites developed by Fabian, DJ1YFK. This database contains all the relevant data for each WRTC station location, such as the name, description, geographical coordinates, access details, contact person and many more site-specific details and is used to prepare a folder to be handed out to each site-manager.

Tools and Experiments

From the abundant stock 65 sites were selected after careful inspection for a clear horizon, a flat and unobstructed reflection zone and distance away from high voltage electricity cables or railway lines. A few of them were tested during 2016 and another 16 during the 2017 test days with good results.

After the 2017 test days Uli, DJ2YA, spent a few days in Jessen for a WSPR experiment. He had built 5 identical setups feeding 100 mW from WSPRlite units from SOTABEAM into a quarter-wave vertical with 4 resonant sloping radials (fig.2). Each day 3 different sites were compared to two fixed sets at the home QTHs of DL3OF and DK4WA in Jessen for a period of 24 hours. Afterwards, the reports from the web were evaluated with the help of special software written by Michael, DL6MHW. Of the 12 sites that were tested in this way not one was significantly inferior to the others. This gave us confidence that we did not need to test all 65 sites, which would have taken a great deal of time and effort.

Instead, the sites were carefully analyzed using “HeyWhatsThat”[1] from the Web and a sample tested using HFTA by N6BV [2]. We owe great thanks to Phil K6TU [3] for providing us the needed terrain data free of charge.

The Flat Horizon

By applying “HeyWhatsThat” on all selected sites it was shown that they all had a clear shot to the horizon at an elevation of almost 0 degrees with an occasional hump of less than 1 degree in single directions (fig.3). According to “Siting Criteria for HF Communication Centres” (p. 19)[4] this will allow radiation angles down to 1 or 2 degrees as long as there are no obstructions in the Fresnel zone.

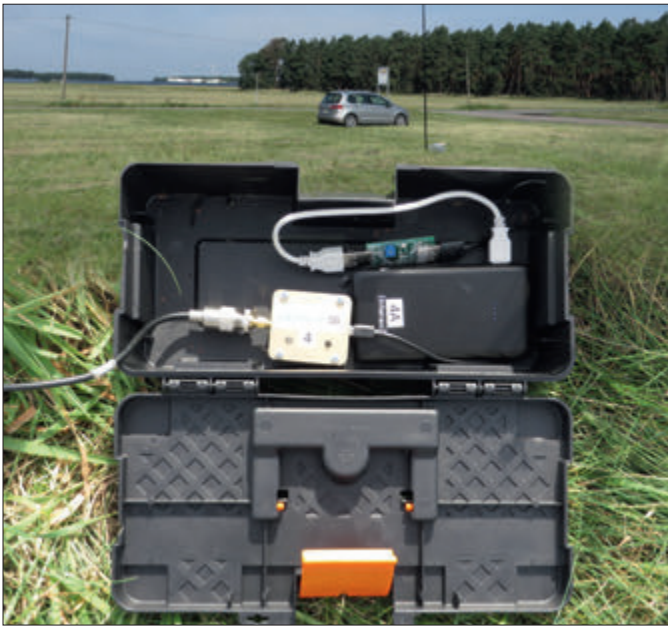


Fig. 2: WSPR experiment near Jessen at JES-010 with WSPRlite and Power Bank

Fig. 4 shows that for a 20m signal the distance to the reflection point is about 700 meters for a radiation angle of 5 degrees with the far edge of the Fresnel zone as far as 4 km away. Apart from obstructions sloping ground in the radiation direction has a significant influence on the effective radiation angle. Falling ground will increase the effective antenna height and by that the signal strength for low angles giving the site an undue advantage, just as raising ground has the opposite effect. With the profile option in “HeyWhatsThat” the shape of the reflection zone can be checked (fig. 5) for obstructions and slop-

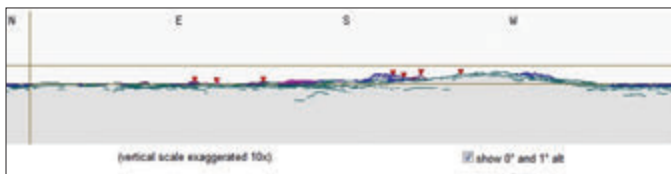


Fig. 3: The horizon view at site MBG-007 with max. elevation <1 deg ing ground. Special attention was paid to NE and particularly to NW directions because most of the (hopefully) expected DX contacts will come from these directions.

Fortunately, obstructions in certain directions (fig. 6) as scanned by the Shuttle Radar Topography Mission in 2000, turned out to be patches of woodland that are not considered to cause attenu-

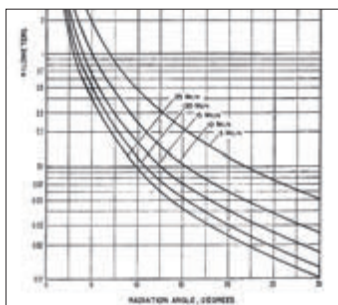


Fig. 4: Distance of ground reflection from antenna

ation for short wave radiation. Unfortunately, they distort the HFTA plots in these directions.

As some of the sites may be closer to water than others they can have different ground characteristics but as already mentioned above conductivity and dielectric constants of the ground have

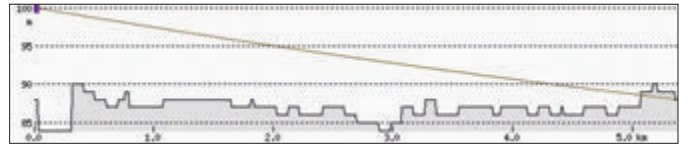


Fig. 5: No obstacles are shown until far beyond the Fresnel zone

only a minor impact on the ground reflection of horizontally polarized waves as can be easily proved by a simulation with EZNEC [5]. Therefore, they have not been considered as a relevant criterium.

A final inspection Trip

Before finalizing the list of sites to be used, they have all been visually inspected on a recent 600 km tour by DM5WF and

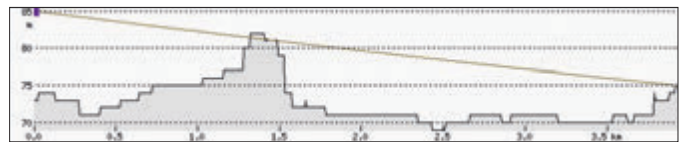


Fig. 6: The “obstacle” at about 1 km is a patch of woodland

DJ2YA. Random samples of elevations as predicted by “Hey-WhatsThat” were checked with a theodolite (fig. 7). Particular attention was given to the criteria that the reflection zone is free from obstructions and that it has a plane surface especially with regard to the possible DX directions. Furthermore, all bands were checked with an IC7300 for possible noise or interference. Five of the originally favored 65 sites did not meet all criteria and were replaced by better ones from Frank’s rich stock. For logistic reasons the sites are now divided into 16 clusters between Wittenberg, Jüterbog und Bad Liebenwerda waiting to be used for the great event.



Fig. 7: Frank, DM5WF, at the theodolite and Andy, DL8UAT, with the compass for the azimuth

Conclusion

We have done our best to safeguard the principle that all competitors must have an equal chance with respect to their allocated sites. However, “the proof of the pudding is the eating” and we sincerely hope that no disappointed competitor will return home with the feeling that they have fallen prey to a lottery for the “best” site.

Sources:

- [1] www.heywhatssthat.com
- [2] HFTA from ARRL Antenna Book, 23rd ed., Supplementary CD
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- [5] Roy Lewallen, W7EL, EZNEC 6+

WRTC 2018 – Setup

Michael Höding – DL6MHW, Christian Janßen – DL1MGB, Andreas Paulick – DL5CW, Rudolf Schwenger – DJ3WE, Ulrich Weiss – DJ2YA

This article gives an overview of the setup of the WRTC 2018 sites (fig. 1). The main focus is on the antenna system because this is the means to spread the WRTC signals world wide. Moreover, we describe some other components. We also briefly describe the process of component selection.



Fig. 1: WRTC-Setup

Photo: DL5CW

Antenna Selection

Since the first WRTC in 1990 beam antennas have always been a substantial element of a WRTC-station, because, as a rule, the transmitting power was only 100 Watt. While in 1990 and 1996 host stations with different beams served as WRTC-sites the organizers of the 3rd WRTC in Slovenia introduced standardized antennas as listed below (ref. tab 1).

Table 1: Survey of previous WRTC antennas [1]

WRTC	High Bands	Low Bands	AntHeigh
1990–W7	Wide variety of tribanders	Inv V dipol (only 40m)	10–20 m
1996–W6	Wide variety of tribanders	Inv V Dipol (only 40m)	10-20 m
2000–S5	Equal trap-tribanders, ECO Italy	Windom (FD4)	12 m on Hilltop
2002–OH	JP tribanders (2/2/2)	2 inv V dipoles	
2006–PY	8-element log periodic	40m 2-El Beam, Inv-V 80m	18m
2010–RA3	HF-37 tribanders (2/2/3)	2 inv V dipoles	12 m
2014–W1	Cycle 24 tribanders (2/2/4)	2 inv V dipoles	12m

*(2/2/4) = 2 el on 20m, 2 el on 15m, 4 el on 10m

For the WRTC 2018 a catalogue of criteria and specifications was worked out by the WRTC Organizing Committee considering good performance, suitable weight for Field Day operation, easy handling by the support teams and costs. There were a number of antennas that met the requirements. The successful offer by Spiderbeam won out by a combination of excellent mechanical and electrical features as well as by the option to integrate a rotary 40m dipole. Spiderbeam has become a Platinum Sponsor for the WRTC 2018.

“The antenna set-up is vital for the success of the WRTC,” Andreas, DL5CW, the head of the WRTC 2018 Station Committee, pointed out, “To set up 65 sites in just 2 days we need antennas that are easy to store and transport while they offer the competi-

tors the expected performance. Spiderbeam has optimally fulfilled our expectations.” (fig. 3)

The Spiderbeam was designed by Cornelius, DF4SA, and has been optimized in numerous DX- and Contest-expeditions during the last 20 years. Andreas, DL5CW, added, “As in Germany



Fig. 2: Many training sessions are the basis for an equal setup

Photo: DL7SI

a great number of groups use the Spiderbeam, there is a treasure trove of experience here. Previous DX- and Contest-activities have proved the usefulness of the concept of the antenna for the WRTCs field day style.” The Spiderbeam Setup also comprises the tower and the rotator.

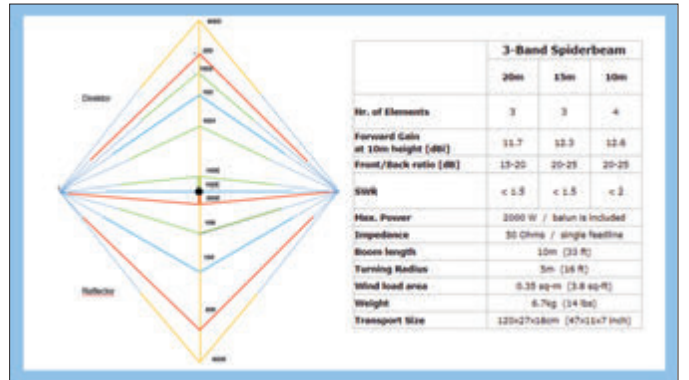


Fig. 3: Configuration of the WRTC 2018 antenna [2]

Fig. 4: Parameters of the Spiderbeam [2]

Antenna Specification

In the WRTC 2018 a light-weight, full-size 3 element beam (20m, 15, and 10m) made of glass fibre and wire will be used. The integrated 40m dipole differs in its main direction by 90 degrees from the beam. Both antennas are supported by a telescopic 14,5m Aluminum mast that is rotated with all directional antennas by a YAESU G-1000 DXC rotator at its foot. The apex of the full-size 80m Inverted-Vee dipole is attached to one of the top guys at a height of 12,5m. Each of the 3 antenna systems is fed by 50 metres of Ultraflex coaxial cables produced by “Messi&Paoloni”. The Spiderbeam is electrically configured as follows (cf. fig. 4, fig. 5):

- 3 ele Yagi for 20m (R-S-D)
- 3 ele Yagi for 15m (R-S-D)
- 4 ele Yagi for 10m (R-S-D1-D2)
- loaded dipole for 40m (with a 90 degree directional off-set)

Higher HF bands

The SWR-graphs (Fig. 7) were plotted with an FA-VA3 antenna analyzer by Michael, DK1KC, at one of sites near Jessen (JES-010) during the test days in 2017. During the WRTC 2018 all antenna teams will use AA-35 ZOOM analyzers provided by Silver Sponsor RigExpert (fig. 6). The special WRTC-Edition of this analyzer with a generator output of +13 dbm for highly reliable measurements can store the data of all sites of each antenna team for documentation. It will guarantee that all antenna systems are equal.

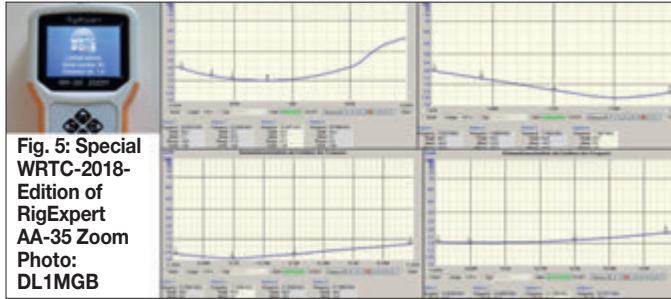


Fig. 5: Special WRTC-2018-Edition of RigExpert AA-35 Zoom
Photo: DL1MGB

Fig. 6: SWR-Plots at the 2017 test days

The directional patterns of the Yagi-antennas are as expected. The radiation patterns (cf. fig. 8) have been taken from Spider-Beam's documentation. [2].

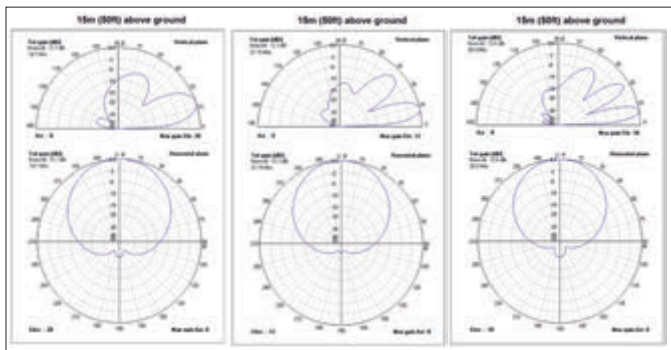


Fig. 7: Radiation patterns according to [2]

The concept of Spiderbeam was adopted from "Dick Bird, G4ZU who was the first one who had the idea of bending the elements like this, and named it the Bow-and-Arrow Yagi or Bird-Yagi. As far as I know he only developed monoband Yagis of this shape." DF4SA wrote. He concluded, "The spider beam is a trapless multiband Yagi constructed of 3 interlaced monobanders, making it a highly efficient antenna with simple construction. The driven element is a directly fed multiband dipole, again contributing to a simple, broadband and low-loss construction. The design is very forgiving, provided the wire elements were cut exactly initially and high quality (non-stretch) wire is used. The mechanical design is optimized for quick, lightweight portable installations, using high quality materials for good reproducibility and a long life without performance degradation." [3]

40-m

The 40m extension was specially designed for the WRTC 2018. The directional pattern provided by Rick, DJ0IP, shows the expected characteristic of a dipole [4]. This could successfully be reproduced in experiments during the test days.

The dipole is rotated by 90 degrees to avoid interaction with the

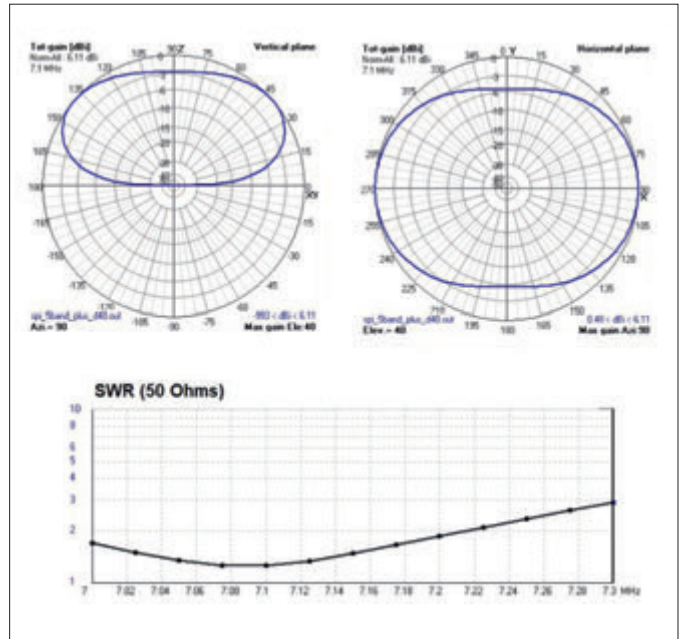


Fig. 8: Characteristics of the 40-m-dipole [4]

higher bands. Moreover, during evening hours it offers the advantage of turning the Yagis to North America (ca. 310 degrees) while the 40m antenna points to UA9 and JA (ca. 40 degrees). The two tiny loading coils weigh just 40g (1.4 oz.) each and are rated at 1000 W SSB/CW. To relieve the mechanical load the loading coil is loosely tied to the boom (cf. fig 9).



Fig. 9: Loading coil for the 40-m-Dipole
Photo: DL5CW

80-m

For 80 metres, Gold Sponsor Wimo has specially modified a Kelemen-Dipole with a 1:1 Balun (fig. 10). As on 80m the upper and lower band sections will mainly be used the resonant frequency can be chosen for CW or SSB transmissions by PowerPole connectors at the dipole ends.

Mounted as an Inverted-Vee the dipole is almost omnidirection-

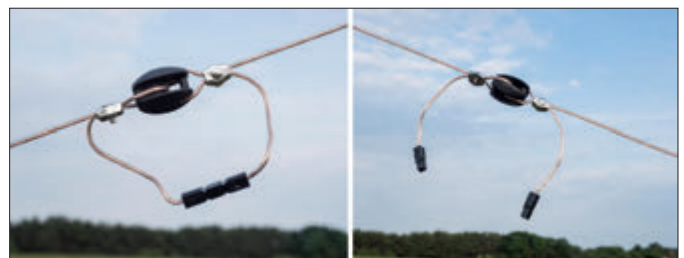


Fig. 10: The length of the dipole can be extended by PowerPole connectors for CW operation
Photo: DL5CW

al (cf. fig. 13). Located in Central Europe the Inverted-Vee offers excellent characteristics for EU contacts and experience has shown that transatlantic DX-contacts are possible as well even with low power.

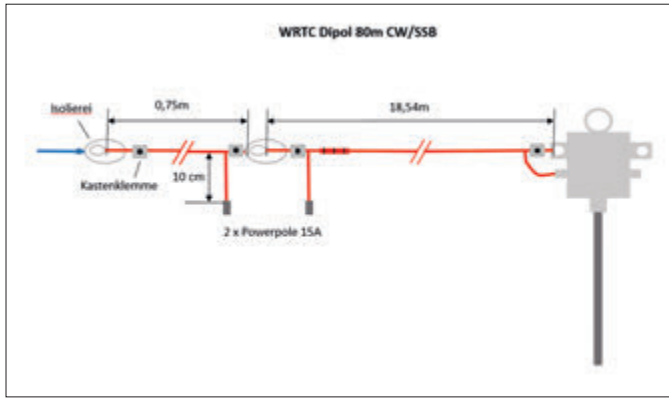


Fig. 11: Schematics of the WRTC 2018 Dipol

160-m

Originally there were plans to include 160m in the bands used in the WRTC as it would allow several hundred contacts with European stations even in summer. To prepare that Uli, DJ2YA, built several antenna versions, full-size or loaded, for tests during the 2016 test days. All versions were set up like the 80m antenna with a horizontal offset of about 30 degrees. The loading-coils for the half-size versions were inserted at the center to keep them small and to ease mechanical problems. Though not

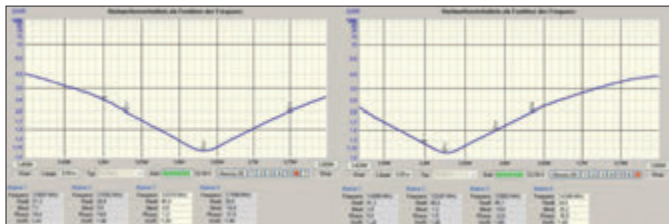


Fig. 12: Typical SWR-Plot for CW resp. SSB [3]

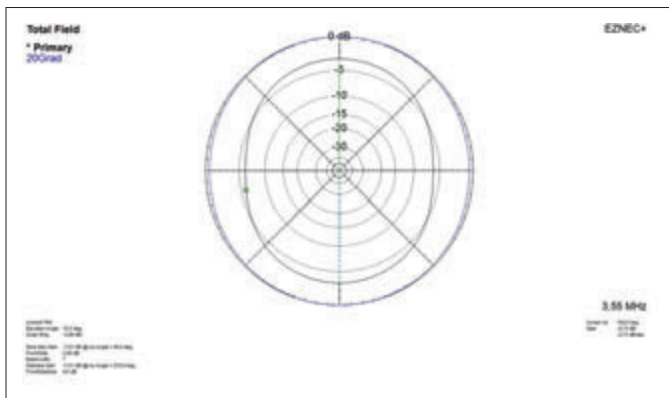


Fig. 13: The Inv-V-Dipole is almost omni-directional (EZNEC-plot by DJ2YA)

optimal even the short ones rendered good results during the IARU-DX-Championships 2016 as well as the full-size versions, of course. As the CW-segment is rather narrow, the smaller bandwidth of the loaded versions was sufficient. However, the idea was dropped when the WRTC Sanctioning Committee decided that 160m should not be included in the WRTC 2018.

Mast, Guying & Rotator

The Spiderbeam configuration comprises a Heavy-Duty-15m-Aluminium mast. To ease the mechanical strain and access to the rotator the entire mast can be turned at its base. This arrangement has already been successfully tested in several Field

Days and DX-peditions and was refined for the WRTC 2018 with sturdy rotators provided by YAESU. The YAESU G-1000 SDX with a turning range of 450 degrees and an end stop to the South can turn the mast without any problems. Tests have shown that a G-650C could also be used but the generous support of our Platinum Sponsor YAESU with the G-1000 SDX will provide an extra level of safety in this important issue.

To connect the rotator with the mast Spiderbeam provides a special adapter. The rugged base plates for all sites were produced by Reinhard, DL1BUG (fig. 14). At the HamRadio 2017 two of the heavy steel plates were used to test fitness in the WRTC-Strong-Man-Contest there (fig. 15).

Reliability and safety were the most important criteria for the guying of the mast. The mast is guyed at 4 levels with the well-proven material from Mastrant, one of the first sponsors of WRTC 2018 and sponsor of previous WRTCs as well. With their excellent guy ropes even strong winds should not cause problems (fig. 16).



Fig. 14: Base plate with YAESU G-1000 SDX

Fig. 15: WRTC-Strong-Man Contest in Friedrichshafen 2017 moderated by Uli, DM5EE



Feedlines

RF energy is fed to the antennas by coaxial cables. There are three of them, one for the 80m inverted Vee, one for the 40m dipole being an integral part of the SpiderBeam, and the third one feeding the 10m/15m/20m section of the SpiderBeam. This translates into a requirement of 150 m of coaxial cable per competition site, making a total close to 10 km of coaxial cable for the event!

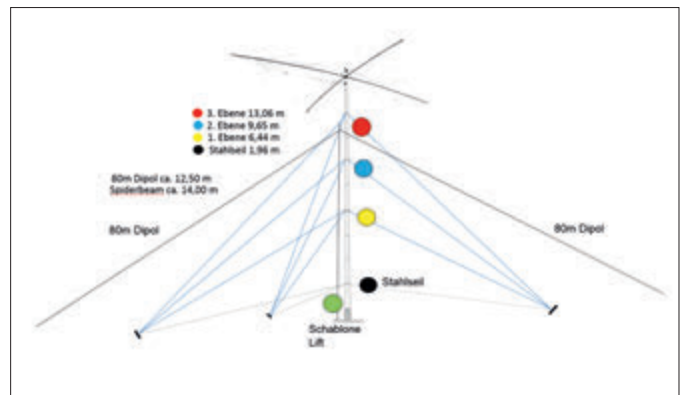


Fig. 16: The guying concept

We wanted to engage a European supplier for the job and were lucky to find Messi & Paoloni (M&P, www.messi.it) in Ancona, Italy. We immediately short listed them in view of their total

dedication to quality, which matched nicely with our philosophy of “no cheap compromises”.

Having tested their Ultraflex 7 in 2016 we were impressed by the fact that their cable – although of much smaller diameter than the commonly used RG 213/RG8 cable – at least matched the RF-parameters of RG 213/RG8 cable, while being much lighter, much more flexible and especially much better shielded than the RG213/RG8 variety of cables. We were especially impressed by their shielding efficiency of more than 105 dB as compared to 55 dB for RG213/RG8 and a mere 50 dB for RG 58. Although such a high shielding efficiency is not really needed for WRTC 2018 we felt that this is the way to go to ensure noise immunity in urban environments with its ever increasing



Fig. 17:
Three 50m coaxial cables M&P Ultraflex7 well stored and labelled

noise level. We need protection from this trend.

Messi & Paoloni have been in the business of supplying coaxial cables to the telecommunications industry for more than 50 years. Basically a 75 Ohm business. Just a couple of years ago they decided to make an impact in the 50 Ohm world addressing among others the HAM Radio segment. When asked about the most impressive 105 dB shielding efficiency of their cable Stefano Messi pointed to their 24 spool braiding machines which allow for 50% more crossovers as compared to traditional 16 spool braiding machines typically used by most of their competition.

Since M&P's marketing strategy matches very nicely with our quality philosophy and timing, M&P quickly agreed to become a Gold Sponsor of WRTC 2018 by donating our entire demand of 10 km of Ultraflex 7.

Infrastructure

Supplying reliable power by generators is most important. As was done in the WRTC 2014 we rely on the well-proven Honda EU-20i for the WRTC 2018 (fig. 18). Their 2 kW will be sufficient to supply the two 100 Watt stations, some computers, monitors and other auxiliary equipment with power. As the absolute reliability of generators by our Platinum Sponsor Honda is essential for the success of the WRTC 2018 compromises are not acceptable.

During our preparations the generators have been run and tested according to directions, including changing oil twice. The successor model EU-22i was also successfully tested, but we decided in favor of the familiar EU-20i.

Another important issue is automatic refueling. Rudolf, DJ3WE, and Hartmut, DM5TI, have intensively evaluated various solutions and selected one that allows refueling the generators without cutting power.

Robby, DM6DX, and his team have evaluated various types of tents and selected one that will be supplemented with a dark extra cover against excessive sunshine as used on many Field Days. Each tent will have a solid wooden floor.

The choice of desks was rather easy. The two 1,8m x 0,75m folding tables provide ample space for stations and components. The choice of chairs was more complicated. After tests for comfort by Irina, DL8DYL, and breaking strength by Chris,



Fig. 18: The army of EU20i during preparation in Jessen

Photo: DL1MGB

DL1MGB, finally a model was found that is optimal and has a decent price.

Further components in the tents are antenna connectors (PL-259), the control box of the rotator, multiple power sockets, fans and EMI-tested lamps as listed in the text box (later).

Conclusion

The WRTC 2018 setup has been developed with great thoroughness. All components have been carefully tested. Installation procedures have been practiced repeatedly. Detailed



Fig. 19: Facility test in 2016 and 2017. The first approach in 2015 was not suitable for large (in terms of weight) contesters

Photo: DK3WW

instructions for the antenna teams and site teams have been developed by Andreas, DL5CW, and Axel, DL6KVA. Possible compromises have been rejected to avoid any unnecessary risk for the world championship. In this respect we owe great thanks to our sponsors who have generously supported our approach for reliability and always delivered their best products.

We sincerely hope that we will remain untroubled by Murphy and that he may keep away from all of the teams as well.

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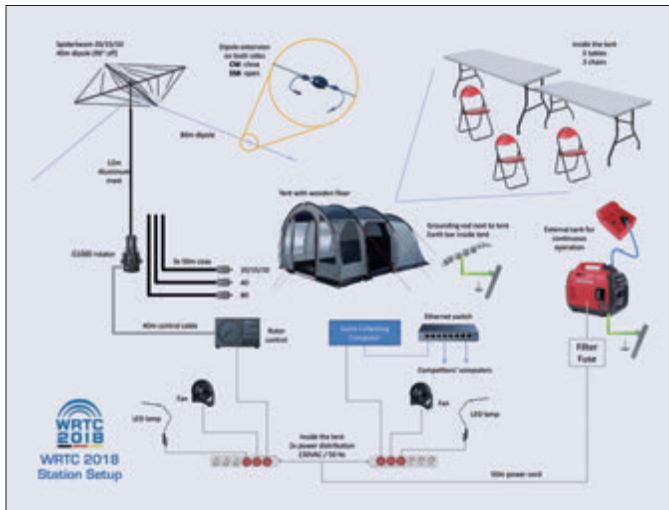
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Station Description

This document describes the equipment that will be provided to teams for WRTC 2018.

All competitors will be located in the same geographical region with similar topography. Competitor locations will be separated by a minimum of 1,000 meters.

WRTC 2018 will be a Field Day style competition. Equipment that will be installed by the organizers at each site is:



- 12m tower with an antenna rotator and control unit
- Spiderbeam 20/15/10 m with one feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector
- 40 m shortened dipole (integrated in the Spiderbeam boom; 90° offset) with feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector
- 80 m Inverted-V dipole with feed line (50 meters of M&P Ultraflex 7) and PL-259 male connector (dipole ends can be changed manually to get best VSWR on CW or SSB segment)
- WRTC 2018 Two-channel Power Monitor: The power monitor acts on forward power only, which may be greater than the actual transmitted power when the SWR > 1:1. In order to transmit 100 Watts to an antenna off the resonant frequency, an external tuner may be used to bring the SWR down and avoid premature triggering of the power monitor
- 2 x 1 meter coax jumpers, PL259 on each end for connecting to the Power Monitor
- Ethernet switch incl. connection cables
- Tent 4.6 meters x 2.7 meters x 2 meters high
- Wood panels under chair and tables
- 2 KW Power Generator (Honda EU20i) with power cable going to the tent
- No Uninterruptable Power Supplies, 12 V accumulator batteries or similar power sources are allowed for power backup. Exception: built-in batteries in portable computers, audio recorder, or other peripherals. CMOS memory backup batteries are allowed.
- Gasoline for generator
- Ground wire connected to ground rod driven near cable entrance to tent
- 2 x 6-outlet 230 VAC power outlet strips (see also <https://en.wikipedia.org/wiki/Schuko>)*
- 2 electric lamps (manual)*
- 2 electric fans (manual)*
- No additional electric cooling devices are allowed such as air conditioners or refrigerators. Additional fans may be used, but

be aware of the power consumption of the generator.

- 2 folding tables (1.8m x 0.75m each)
- 3 chairs*
- WC cabin with hand wash facilities
- Drinking water*
- Food and snacks*

Competitors are not allowed to substitute any equipment except for those items marked by an asterisk. Key components are shown here.

Since this is a field day style operation each team will have a generator which has to be filled with gasoline. To avoid team members spending their time re-filling the generator, the organizers will provide dedicated volunteers at every location to ensure the generator is kept running during the contest period.

Triplexer

It is highly recommended, but not mandatory, that each team provides a “triplexer” device for the triband antenna. The function of the triplexer is to provide discrete band outputs using one coaxial feed. This allows operation of the tri-band antenna on two bands simultaneously.

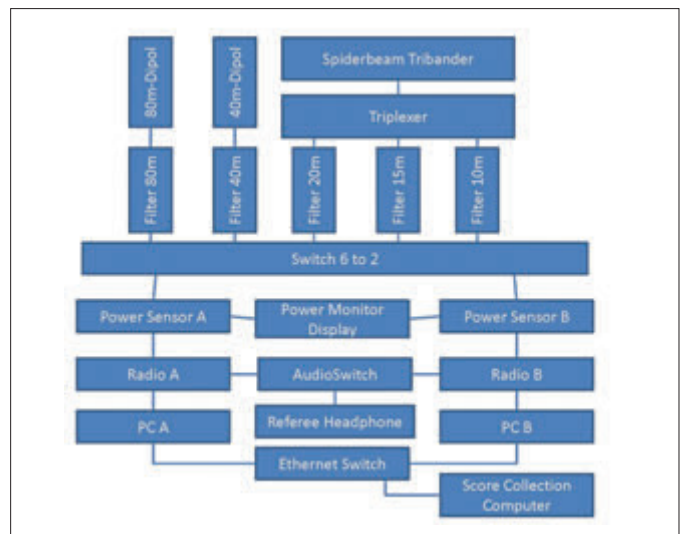
It is up to the team to provide such a device, but it must not amplify the signal in any way.

There are several commercial manufacturers of triplexers.

For details on building your own triplexer, refer to June 2010 QST “HF Yagi Triplexer Especially for ARRL Field Day” by K6KV.

Station Layout

A typical connection diagram of a WRTC station is shown here:



Preparing for the real-time scoreboard

Klaus Wöhler – DF9XV, Ben Büttner – DL6RAI, Robert G. Raymond – WA1Z, David H. Pascou – KM3T

How's the competition going? Who is ahead? Where is a particular team? Answers to these questions interest competitors and spectators alike, in every sport – including radio sports. It's about speed not only with the operators at the WRTC stations but also with results reporting. On-line presentation of the current score requires a lot of technical effort behind the scenes! Ben Büttner, DL6RAI, who leads the responsible IT team at WRTC 2018, says: "We want to make sure that from all competition locations, the on-going results in minute intervals are available on a scoreboard similar to a Football league table and at the same time published on the Internet at www.wrtc2018.de. In order for this to work, special attention is attached to unwanted RF radiation, thermal stability and redundant power when we build the Score Collection Computers (SCC). An important goal is that there should be no disruption during the competition."



Fig. 1: Luise (DL2MLU) at work

Photo: DL6RAI

The SCC

The SCCs, which are built on a RaspberryPi base, collect the information required for the presentation of the results from the relevant logbook software at each site and transfer this data via the mobile phone network to a central server. From the results gathered there, the current position table is created and made visible on the Internet for everyone. "We finished building the SCCs over the Whitsun weekend" says Ben, DL6RAI. "Parts for 55 SCCs were assembled to make a total along with the existing 15 machines of 70 devices as required for the WRTC" Ben said (fig. 2).



Fig. 2: Work finished – Wolfgang (DK7MCX) and Luise (DL2MLU) proudly presenting the SCC units

The idea of a current scores table is not new. The scoreboards were already available in 2002 "on-line", but only current on an hourly basis. At that time, the referees sent messages via SMS, which were then published to the Internet. At the time it was extraordinary and a novelty. At WRTC 2014 in Boston, Bob Raymond, WA1Z and Dave Pascoe, KM3T, developed the SCC concept (fig. 3). When used in 2014, however, it became clear that not all locations could be reliably reached via the local mobile phone network.

Incidentally, a scoreboard for contest participants is not a new idea from the WRTC.



Fig. 3: Rear of the SCC Units

The web site www.cqcontest.net offers up-to-the-minute results tables for all major contests. Many contesters are already taking part. Integration takes place via the Internet. "The scoreboard at cqcontest.net is a great facility" says Michael Höding, DL6MHW, responsible for public relations at WRTC 2018. "You can watch the top people driving each other during the contest. This scoreboard is also interesting and useful for normal radio ops as often there are competitors with similar station capabilities to the normal op. This is fun and transforms the contest into a new kind of direct head-to-head competition. It's like being in the last third of a half-marathon and you want to catch up with the sportsman in the blue shorts ahead of you".



Fig. 4: DL6RAI, checking network quality during the test session in 2016

Main Scoreboard (Home) Page

The main scoreboard page shows the latest total score data received from each team. The scoreboard will be viewable with

out having to do page refreshes or reloads in the browser – it will update dynamically every time an update is received from any field station. Teams are supplying their scores about once every 5 minutes.

Fig. 5: Example of the still empty scoreboard

Scoreboard column descriptions

- Columns CW and SSB show the number of contacts a team has made on each mode with other stations around the world. Each contact is awarded a number of geographically-based “points.” For this year's WRTC competition, all contacts made outside of Europe count as 5 points. Contacts to stations in Europe are worth 2 points.
- Column DX shows the total number of countries that the team has worked on all bands. DX is one of the “multipliers” used in WRTC scoring.
- Column HQ shows the total number of Headquarter stations that the team has worked. A Headquarter station represents the national amateur radio society in a particular country. Along with DX multipliers, Headquarter stations are counted as multipliers in the WRTC scoring system.
- Column Score is the team's current score. This score is calculated by taking the total number of contact points awarded multiplied by the sum of the DX and HQ multipliers: $(\text{contact points} * (\text{DX} + \text{HQ})) = \text{total score}$

There may be some times during the competition where only the Score field will be completed with hyphens (-) in the other data fields. This occurs if we are retrieving scores from our back-up reporting system. If the automated score transmitting hardware at a site is unable to report score data the WRTC referees are instructed to send the Total Score only via SMS (text) messages. Once the score transmitting hardware at the site is back online, all data will be visible again.

Table Leaders

WRTC 2018 will award “Special Awards” to teams who have the highest number of contacts (QSOs) on SSB and CW, as well as the team with the highest overall Multiplier total. The Leaders page shows the Top 5 teams in each of these categories. This data will update dynamically every time an update is received from any field station, no browser refresh is needed.

Team Details

The Team Details page will display band summaries and an estimated rate sheet showing the team's progress compared to where they were at on the last hour change. These pages will be updated a few minutes after the change of the hour.

Band summaries show the breakdown of contacts and multipliers that are used on each band from 80 Meters (3.5 MHz) to 10 Meters (28 MHz).

The estimated rate sheet will break down the contact and multiplier total by band for each hour of the competition. We use

the last transmission that we receive prior to the top of the hour for comparison. This is intended to be treated as an estimate only; it is unlikely these rate sheets will match exactly hour-by-hour to the actual rates from each team but it will give a fairly good indication of the rates being experienced by each team. For each band (80 through 10 meters) the contacts and multipliers will be separated by a slash “[QSOs]/[Multipliers]”.

Compare Teams

This page can be used to select up to five teams to view and compare performance by band. After a couple hours into the competition, a line chart will be displayed at the bottom of the page showing the hourly score progression for each team. The data on this page is also updated once an hour at the same time as Team Details.

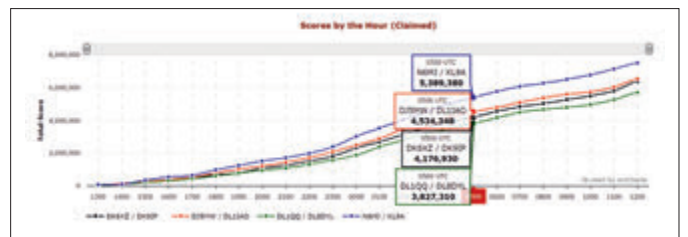


Fig. 6: Compare teams – German teams during WRTC 2014

How does the Live Scoreboard System work?

WRTC 2018 Live Scoreboard is a fully automated system displaying score data received directly from competitors' logging programs. The system requires “near-zero configuration” and no third-party software agents on competitor’s logging comput-

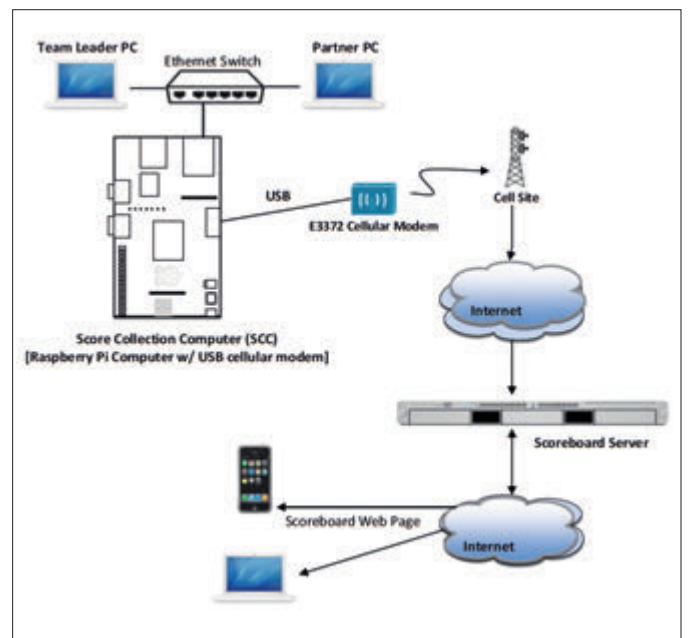


Fig. 7: Architecture of the Scoreboard System

er – all that competitors have to do is configure their logging programs for score transmission on their local network, which is something that is already supported in all major contest logging software.

The Live Scoreboard System consists of several hardware and software components.

Hardware components (all defined by the WRTC 2014 team)

- Score Collection Computer (SCC)
- Ethernet switch
- USB cellular modem (Telekom LTE V)

Software components

- Custom WRTC 2018 software (written in Python, which resides on each SCC)
- Pcap (Python interface to libpcap packet capture library)
- Custom web application (PHP) and support scripts (Python)
- Twilio API (for SMS sending/receiving)

The SCC is a passive node on the LAN – it is unable to perform any packet routing functions, for example – so it offers no path to the Internet from the LAN (in case you were wondering). It simply listens for score broadcasts, parses the score details from the XML broadcast, and then sends the score details to our web service (every 5 minutes) for processing and display.

What if an SCC fails in some way? What if the cellular coverage isn't good enough to be able to send data? We've analyzed all the possible failure modes and developed plans to address them.

We've tested a sample of the sites and know that cellular coverage is generally OK. For modem or oddball connection issues that don't fix themselves – we have a network watchdog script on each SCC that checks for network connectivity and resets the cellular connection if it detects an issue.

The bigger backup plan: our web application detects when a score hasn't been received for 10 minutes. When we detect that the SCC appears to be offline we automatically send an SMS (text) message to the Referee's cell phone (all Referees will have one, registered with our web service), instructing him to try rebooting the SCC and to start sending the total score in via SMS. SMS messages almost always get through, even in marginal coverage areas. When the SCC comes back online we inform the Referee to stop sending SMS updates.

The WRTC 2014 Power Monitoring System

Steve Elliott – K1EL

Reprint from National Contest Journal – NCJ July/August 2014

WRTC 2014 is unique among radiosport events in that all operators are stations are required to use identical stations. The organizers are responsible for providing equal antenna systems and locations that are as equal as possible, but the teams bring their own transceivers, filters, switching, etc. One of the requirements of the WRTC 2014 competing stations is that they must all comply with the 100 watt output power limit. However, some transceivers are capable of delivering 200 watts of output power, which would give such stations a 3dB advantage over stations running exactly 100 watts.

Measuring output power can be very subjective. Analog power meters are subject to interpretation, especially on SSB. Analog meters tempt operators to raise their average power by increasing the microphone gain or speech processing, often leading to splatter and other forms of poor transmitted signal quality.

In the interest of consistency, it is necessary for all stations to use identical power meters. The WRTC 2014 organizers reviewed the available options and chose to develop a custom system. There are two main components to the system: a detector and the indicator. Since the WRTC 2014 stations include two transmitters, the decision was made to provide two detectors and a dual channel RF status display that would be visible to both the operators and the on-site referee.

The detector must be accurate over a wide range of frequencies and should provide an output that corresponds to the forward power of the transmitter independent of the antenna's impedance and resulting system SWR. Attempts to create a scratch-designed system were unsuccessful, with significant variations over frequency and load impedance.

A discussion with engineers at MFJ/Ameritron revealed that a suitable detector was included inside many of their tuner and amplifier products and could be installed in an aluminum box with SO239 connectors.

The dual channel RF status display resides on a single printed circuit card and is implemented in two Microchip Technology PIC12F1501 microcontrollers, with one PIC for each channel. Each PIC is responsible for monitoring a channel's RF level and lighting one of three status LEDs: one red, one yellow, and one green. When no RF is present all LEDs are off; if RF is at an acceptable level the green LED is lit; if the RF is approaching violation the yellow LED is lit; and if the power level is in violation the red LED is lit. To conserve power, only one LED per station is turned on at a time.

The RF detector for each channel generates a DC voltage that is proportional to the average RF power level. This voltage is delivered to the input of the display board where it passes through a low-pass filter and is attenuated, then rectified, and

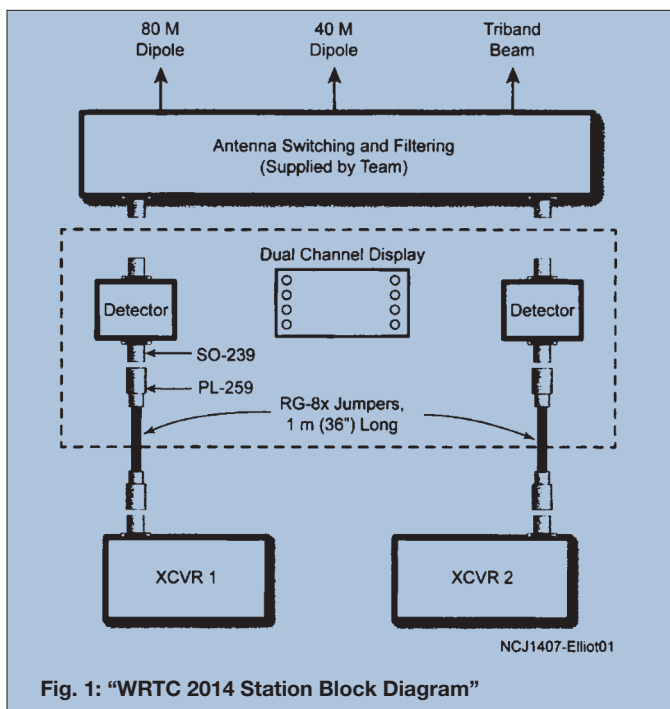
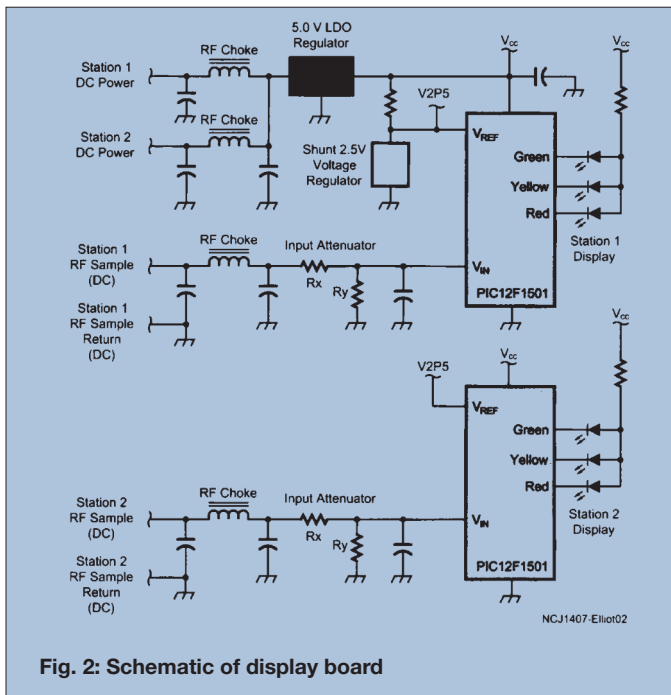


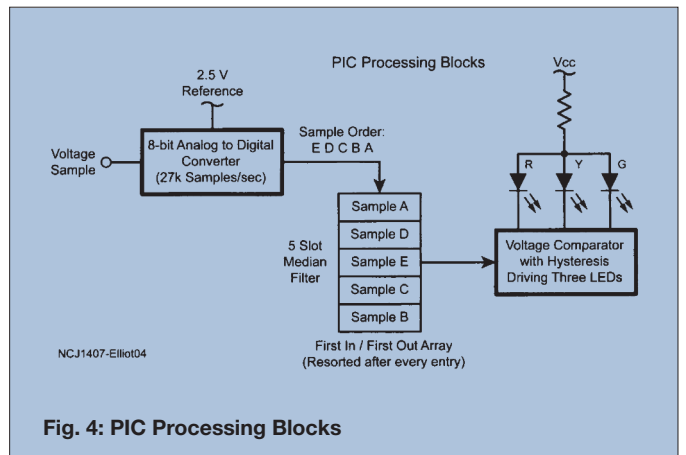
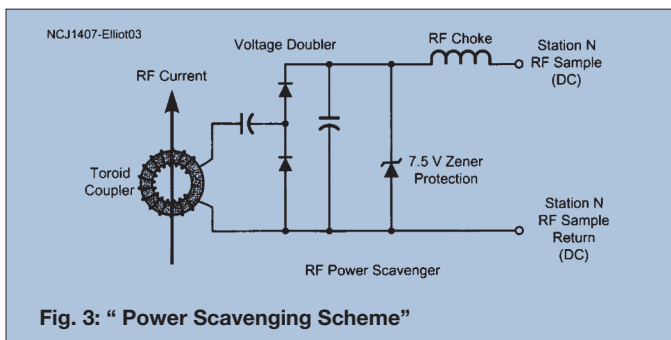
Fig. 1: "WRTC 2014 Station Block Diagram"



filtered again. This voltage is sensed by an analog-to-digital converter in the PIC that converts the sampled voltage into a stream of digital values. The converter produces a new 8-bit value every $36 \mu\text{s}$, with a resolution equal to the voltage reference, 2.5V, divided by 256 steps, or 9.76 mV per step.

The display board block diagram shows the basic design components. An 8-pin PIC was chosen that provides three LED outputs, one analog input, a voltage reference input, a test pin, Vcc and Vss. Though it may have been slightly more cost effective to use one single PIC shared between two channels, employing two PICs is advantageous since the single analog converter in the PIC does not have to be shared, improving analog acquisition time. In addition, each transmitter has a separate signal path, which reduces cross talk and facilitates PCB layout.

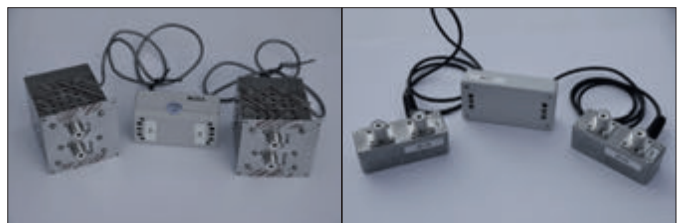
The PICs are well known for their miserly power consumption, and require much less current than is needed to light the LEDs. Each PIC gets its power by scavenging a small amount directly from the RF lines they are sensing, and since only one LED per channel is lit at a time, even this requirement is quite low, on the order of a few tens of milliwatts. Each power tap provides rectified DC power which is filtered and combined to drive a single, shared 2.5 V LDO voltage regulator that powers both PICs. The dc power derived from the RF and delivered to the PIC constantly cycles on and off, following the envelope of the transmitted CW or SSB signal. Normally a microcontroller could not tolerate this sort of operation and would exhibit very erratic behavior. The saving grace is the PIC's low-voltage reset feature. When the supply voltage drops below 2.7 volts, the PIC is automatically held in a reset state. When reset, the PIC is in



a standby state, will not respond to analog input, and all LEDs are off. Latch up is not possible in this state. Once power returns to normal operating level, the PIC is released from reset, quickly reinitializes, and resumes RF sampling. Note that the PIC can still operate at a supply voltage approaching 2.7 volts since an external 2.5V reference is used by the analog to voltage converter. This insures that the digital values produced are truly independent of the PIC's supply voltage. Once the values are digitized they are processed in the digital domain which does not depend on operating voltage.

Analog to digital samples are processed through a median filter. This filter is very effective in smoothing fast-moving input levels and is superior to averaging. In this design, successive samples are loaded into a five-sample, first-in first-out array. After a new sample is added to the array the values are sorted and the middle value is taken as the current smoothed value. This insures that unwanted transients, either high or low, go to the ends of the array and are ignored. Valid values will fill the array so that the center value will match the value of interest. Since the sample rate is so high, it is a very accurate representation of the average RF level. Every smoothed sample is compared against predetermined thresholds to determine which LEDs, if any, should be lit. Some hysteresis is applied to hold a lit LED on to increase persistence and make it easier to see.

The PIC has an internal voltage reference that can be used with



Additional Fotos by Matthias Jelen, DK4YJ

the analog-to-voltage converter, but the accuracy is not very good — only $\pm 10\%$. This is not sufficient for this application so, an external accurate voltage reference is utilized. This regulator is shared between the two PICs and is accurate to within $\pm 2\%$, which is far better than the internal reference, and it gives very repeatable performance across all display boards.

The resulting system provides the operators and referees with a clear indication that the transmitters are being operated in accordance with the WRTC 2014 competition rules.

The Author

Steve Elliott, K1EL, is proprietor of K1EL Systems. He developed the Winkeyer and WKUSB series of products used by thousands of contesters around the world. He lives in Bedford, NH.

WRTC 2018 Competition Rules

These are the official competition rules for the World Radiosport Team Championship 2018 in Germany.

They replace any previous version. Any questions should be addressed to competition@wrtc2018.de or to the WRTC 2018 Mailing List (<http://www.wrtc2018.de/index.php/en/ueber-uns-2/maillinglisten-2>).

1. Contest Period

The WRTC 2018 competition will be held concurrent with the IARU 2018 HF Championship.

Start: Saturday July 14th, 2018 12:00 UTC (14:00 local)

End: Sunday July 15th, 2018 11:59 UTC

2. Frequencies / Bands

Only the 3.5, 7, 14, 21, and 28 MHz bands may be used. All participants must comply with the frequency regulations of the Bundesnetzagentur (http://www.gesetze-im-internet.de/afuv_2005/-anlage_1.html). Contestants must not operate outside of the allocated ham-radio bands and should follow the band plans recommended for IARU region 1 (<http://www.iaru-r1.org/index.php/spectrum-and-band-plans/hf>).

3. Modes of operation

CW and SSB.

4. Language

Only English language and common international abbreviations may be used when operating either SSB or CW.

5. Contest Exchange

5.1 WRTC stations must send signal report plus ITU zone (DL is ITU Zone 28). A complete exchange must be sent and logged for each valid QSO.

5.2 Apart from 5nn no other abbreviations are allowed when sending the exchange either on SSB or CW. Operators must say 5-9 28 on SSB resp. 5nn 28 or 599 28 on CW. Further cut numbers such as enn28 are not allowed. Operators may increase the speed of the exchange up to a maximum of 50 WPM. Voice recorders are allowed to send the exchange on SSB.

6. Valid QSOs

Each callsign may be worked once on CW and once on SSB per band. Cross-band or cross-mode QSOs are not allowed.

7. QSO Points

Each valid two-way CW or SSB QSO is worth the following QSO points:

QSO	Points
Within Europe	2
Outside Europe	5

8. Multipliers

8.1 The total number of DXCC countries plus IARU member society HQ stations on each band will count as multipliers, once per band regardless of the mode. IARU officials represent a maximum of four multipliers per band (AC, R1, R2 and R3).

8.2 IARU member society HQ stations and officials do not count for DXCC country multiplier.

9. Score

The final score will be:

Score = (Total number of multipliers) × (the sum of QSO points).

After adjudication the Judging Committee will calculate the final score for all entries based on Cabrillo logs submitted.

10. Champions

The WRTC 2018 Champion will be the team with the highest score.

11. Special Awards

- The WRTC 2018 SSB Leader will be the team with the highest QSO total on SSB.
- The WRTC 2018 CW Leader will be the team with the highest QSO total on CW.
- The WRTC 2018 Multiplier Leader will be the team with the highest total number of multipliers.
- The WRTC 2018 Accuracy Leader will be the team with the lowest percentage of callsign/exchange errors.

As WRTC is a mixed mode contest, to apply for Single mode Special Awards a minimum of 35% of the total number of QSOs must be made in another mode.

12. Special Rules and Disqualification

12.1 WRTC 2018 stations must be QRT for at least 15 minutes prior to the contest start (by 11:45 UTC). The receiver volume of both radios must be turned fully off and no monitoring or transmitting is allowed within this 15-minute timeframe. The radios may be left powered on.

12.2 The operators are not allowed to intentionally identify themselves (i.e., revealing their own callsigns) before or during the contest or reveal their team identity in any way. Any attempt to do this such as by radio, telephone, SMS, internet, email, etc., may result in immediate disqualification. Requesting QSOs (e.g., setting schedules with special identification procedures in any way) before the contest period is strictly forbidden.

12.3 Operators may request QSOs with any station on another band/mode. All requests must be made during the contest period with no other attempt to reveal the team's identity. All requests can only be made on HF CW or SSB, and by no other means.

12.4 Use of DX spotting (e.g., Packet, Web, etc.), skimmer or any other spotting and supplementary information network

is not allowed. Operators are not allowed to receive any assistance to learn the callsign or exchange of any station other than by tuning the radio and listening by human ear.

- 12.5 The use of any callsign database or the ‘Super Check Partial’ tool is not allowed. If the logging software incorporates this kind of feature, it must be disabled. The logging computer(s) may display a ‘Check Partial’ list based only upon the callsigns already worked during the contest.
- 12.6 The WRTC Contest is the equivalent of the Ham Radio Olympic Games. To maintain the spirit and credibility that this name implies, the Judging Committee may disqualify a team that commits any of (but not limited to) the following actions:
- Violation of the rules of the contest.
 - Unsportsmanlike conduct.
 - Taking credit for excessive unverifiable QSOs or unverifiable multipliers.
- 12.7 WRTC stations should not encourage “cheerleading”, i.e. QSOs in which supporters make QSOs with only a favoured team or exclusively spot that team on the DX-cluster. Cheerleading should be actively discouraged by the competitors and abuses through the use of cheerleading may result in QSOs being removed from logs as deemed necessary to assure a fair competition.
- 12.8 The decisions of the Judging Committee are final.

13. Callsign Allocation

The callsigns assigned to the competitors will be selected from special calls in a “to be determined” series. The process of assigning calls and stations will be randomly designated by lottery on Friday, July 13th, 2018 before the contest. The competition callsigns will be given to the teams by their referee at the station 15 minutes before the contest at 11:45 UTC on Saturday, July 14th, 2018. Team members are not allowed to know the callsign before this time.

14. Logging

- 14.1 Computer logging is required.
- 14.2 Each WRTC 2018 team must submit its log file in Cabrillo format to their referee until 12:30 UTC of Sunday, July 15th, 2018. In addition the log needs to be provided in the source-form at of the logging-software (e.g. wt4-Files for win-test).
- 14.3 All competitors are required to use one of the following logging programs:
- Writelog
 - Win-Test
 - TR4W (TR for Windows)
 - N1MM Contest Logger
 - DXLog.net
 - SkookumLogger
- Other software that meets the requirements of Cabrillo output and database limitations may also be acceptable with written permission from the WRTC 2018 Organizing Committee at least 90 days prior to the contest. The team is solely responsible to ensure the software conforms to WRTC 2018 standards as defined in these rules. The Cabrillo log needs to assign the transmitter id “t” according to Cabrillo-standard, i.e. by two different parameters “0” and “1” to identify the radio used for the QSO. For instance Win-Test needs to be configured in M/2 with Overlay WRTC. Other logging programs need to be configured similarly to indicate the radio.

Details of the Cabrillo-format can be found on:

<http://wwrof.org/cabrillo/cabrillo-qso-templates/>

- 14.4 In any case, it is the sole responsibility of the competing teams to create Cabrillo-compliant code with the software used in the contest. The Committee does not assume any responsibility for the conversion of log data into Cabrillo format.
- 14.5 Logging software must be configured to broadcast current score information for publication during the contest.

15. Recording

- 15.1 After the contest, each team must provide to the referee a continuous stereo audio recording of Radio A and Radio B on one of the following storage devices:
- USB2 compatible device (USB flash memory, USB hard drive)
 - CD/DVD disk
- The recordings should be separated into two audio files, one for each radio. Recordings may be established in one of the following two formats:
- Two (2) separate files, one for each radio.
 - One file with each radio on a separate channel.
- 15.2 The Judging Committee has the right to remove any claimed contacts not found in the recordings. Upon demand the teams must provide additionally the associated player, e.g. if non-standard audio formats are used.

16. WRTC 2018 Station Setup

- 16.1 Each participating WRTC team must bring everything needed for their station except items listed in Station Description.
- 16.2 Each WRTC 2018 station will have two radios – Radio A and Radio B.
- 16.2.1 Radio A and Radio B can each use only one antenna connector. This means that every transmission and reception must go through a single antenna connector of that Radio. No external receive antennas are allowed. External band-pass filters are allowed in the receive line if desired.
- 16.2.2 Use of any sub receiver in radios that are so equipped, is not allowed. This includes diversity receiving. Radios are not allowed to receive on two frequencies simultaneously. For a two-channel (or multi-channel) radio (which has sub-receiver or parallel reception capabilities), which allows reception of signals on different frequencies simultaneously, the sub-receiver (or that parallel reception) must not be used. If the sub-receiver is technically required to operate the bandscope/waterfall, then technical means (e.g. mono headphone adapter) need to assure that no audio of the subreceiver can be utilized.
- 16.2.3 Operators are allowed to share audio between Radio A and Radio B. Each operator may listen to the other operator’s radio and vice versa.
- 16.2.4 Both Radio A and Radio B are allowed to transmit. The contest is a full Two-Operator Two-Transmitter type operation. The only limitation is that each radio must transmit on a different band regardless of mode (e.g., if Radio A is on 15M SSB, Radio B is not allowed on 15M SSB or 15M CW during the same time).
- 16.2.5 Spectrum scopes (pan adapters) are allowed provided that they are used solely for spectrum visualization. The spectrum scope may be built-in to the radio or be a separate device. It may be connected to the radio or PC-A/B with the following limitations:

- 16.2.5.1 The only output from the spectrum scope can be video, i.e. it can show current or past signal strength (spectrum, peak hold or waterfall). Other demodulation, analysis or decoding, e.g. for the purpose of content analysis, CW-decode, station identification, Skimmer, etc., is not allowed.
- ~~16.2.5.2~~ (removed, 27th June 2017)
- ~~16.2.5.3~~ (removed, 19th December 2017)
- 16.2.5.4 The spectrum curve may be displayed in any suitable device, including the PC-A/B monitor screen.
- 16.2.5.5 Additional computers or an attached control console may be used for SDR signal processing.
- 16.2.5.6 The spectrum scope can be used to control frequency (e.g., tune Radio A/B).
- 16.2.5.7 If a remote control console or additional computer (16.2.5.5.) is used, then signal demodulation may happen in one and only one device (either the main radio or the control console). The control console must be within the provided tent and only be controlled by one – and only one – of the operators.
- 16.3 All radios must be commercially manufactured transceivers, meeting all manufacturer specifications.
- 16.4 Each team is allowed to have two backup radios. The backup radios may only be used in case of malfunction of the main stations radios and with approval of the referee.
- 16.5 Radio A and Radio B are each limited to 100 watts (KEY DOWN in CW, single tone in SSB) maximum power output. The power will be measured by a peak power monitor provided by the WRTC 2018 Organizing Committee. The monitor has two detectors which must be connected directly to Radio A's and Radio B's respective antenna connectors. The power monitor acts on forward power only. Any devices connected after the detectors must not amplify the transmitted signal. All transmit- and received signals of one radio must pass the power detector of that radio. No bypassing of the detector is allowed.
- 16.6 Band-pass filters are allowed for both Radio A and Radio B. External antenna tuners are allowed for all antennas. These devices must be connected after the power detector. Any power losses from these devices may not be compensated for in any way.
- 16.7 Two networked PCs are allowed (PC-A at Radio A, PC-B at Radio B). The PCs should be named PC-A and PC-B (or similar) within the team's logging software before the contest begins. No wireless connections are allowed from the PCs except for wireless keyboards resp. mice. No Wi-Fi or Bluetooth network connections are allowed. Network connections between logging computers must utilize the Ethernet switch provided by the WRTC 2018 Organizing Committee. Each team will provide two straight Ethernet cables to connect PC-A and PC-B to the Ethernet switch. Each team should also provide an Ethernet crossover cable to use in case of an Ethernet switch failure – or should plan on bringing a backup Ethernet switch (3 ports, minimum).
- 16.8 The teams must provide an audio output for both radios for use by the referee. This may be in parallel with the recording device described in rule 16.9 if desired. The audio must be isolated so the referee may listen to either channel or both at the same time. The team may provide headphones for the referee or the referee may bring his or her own. In either case, it is the team's responsibility that the referee can monitor both radios continuously. If the referee uses his or her own headphones, it must not interfere with the team's audio in any way. The audio output should be terminated in a 3.5mm headphone female jack for the referee to plug into. If desired, the referee may bring an audio switch box to choose Left/Right or Both audio channels.
- 16.9 The teams must provide the equipment for recording the WRTC contest operation, including both the received and transmitted audio of Radio A and Radio B. With this equipment the teams must generate the audio recording described in section 15. The recording must be uninterrupted and comprehensive for the entire period of operation. A third PC is allowed for this purpose, but may not be networked to PC-A or PC-B in any way. Operators are not allowed to review the recorded audio except for troubleshooting purposes while under the referee's supervision.
- 16.10 Teams may adjust the length of the 80M antenna to move its resonance from the low end of the band to the SSB portion or back. This may be done by opening or closing a connection at the ends of the 80m-dipole. The center, the length of the various sections and ends of the antenna must not be moved. This adjustment must be made while standing on the ground. No climbing of the antenna structure or other objects is permitted. In the case of a failure of the wire antenna(s), only the WRTC support staff is allowed to repair it. It is not allowed to move the antenna ends without explicit permission from the WRTC 2018 Organizing Committee.
- 16.11 Participants are not allowed to change or cut antenna coaxial cables provided by the organizer. All such cable lengths must remain unchanged. Any filters or other devices allowed as previously described must be connected after the entire length of cable provided.
- 16.12 Before the competition the Teams are allowed to use third party technical support to organize and install the station as well as to install and test software or other permitted devices and peripherals. The support team must leave the site area by 11:30 UTC on Saturday, July 14th, 2018 at the latest.
- 16.13 During the competition the Referee may permit repair of any equipment or antennas reported damaged during the operation. This can be done by the operators or by the WRTC support staff only. No third party is allowed in the operating area at any time during the competition.
- 16.14 All equipment used by any team must be located inside of the tent (except generator, antennas and cables). Participants must stay in the tent and/or designated control area from Saturday, July 14th, 2018, 11:45 UTC until Sunday, July 15th, 2018, 12:30 UTC.

17. Definitions

17.1 Radio	
Radio A	Radio B
<ol style="list-style-type: none"> 1. Allowed to transmit 2. Main receiver reception) 3. Sub-receiver reception is not allowed 4. VFO A and VFO B transmit 5. A triplexer should be used on the triband antenna to provide 10/15/20 meter antenna inputs. See special triplexer section in the station description. 6. Allowed to use band-decoder 7. Allowed to use audio and RF filters 8. Can share audio with Radio B 9. Must share audio with Referee 10. Can be replaced by backup Radio (in case of failure) 11. Radio A cannot transmit on the same band as Radio B. The operator may listen on the same band as Radio B at any time. After one QSO is made on a band, all QSOs for that band must be made on the same radio during that time. Either radio may use any antenna but may not share that antenna with the other radio. 	<ol style="list-style-type: none"> 1. Allowed to transmit 2. Main receiver reception) 3. Sub-receiver reception is not allowed 4. VFO A and VFO B transmit 5. A triplexer should be used on the triband antenna to provide 10/15/20 meter antenna inputs. See special triplexer section in the station description. 6. Allowed to use band-decoder 7. Allowed to use audio and RF filters 8. Can share audio with Radio A 9. Must share audio with Referee 10. Can be replaced by backup Radio (in case of failure) 11. Radio B cannot transmit on the same band as Radio A. The operator may listen on the same band as Radio B at any time. After one QSO is made on a band, all QSOs for that band must be made on the same radio during that time. Either radio may use any antenna but may not share that antenna with the other radio.
17.1 Computer	
Computer A	Computer B
<ol style="list-style-type: none"> 1. May be interconnected with Computer B 2. Allowed to key Radio A only. 3. Can exchange messages with Computer B 4. Voice and CW keyers are allowed 5. Super Check Partial is not allowed 6. Log must be converted to Cabrillo format after the contest 	<ol style="list-style-type: none"> 1. May be interconnected with Computer A 2. Allowed to key Radio A only. 3. Can exchange messages with Computer A 4. Voice and CW keyers are allowed 5. Super Check Partial is not allowed 6. Log must be converted to Cabrillo format after the contest
17.1 Operator	
Operator A	Operator B
<ol style="list-style-type: none"> 1. Operator of Radio A 2. Operator A can change position (chair) with Operator B at any time 3. Allowed to populate the band-map 4. Can exchange messages with Operator B 5. Must share audio with the Referee throughout the contest 6. Can share audio at any time with Operator B 7. Can operate any of the allowed devices 	<ol style="list-style-type: none"> 1. Operator of Radio B 2. Operator B can change position (chair) with Operator A at any time 3. Allowed to populate the band-map 4. Can exchange messages with Operator A 5. Must share audio with the Referee throughout the contest 6. Can share audio at any time with Operator A 7. Can operate any of the allowed devices

18. Disclaimer

In the event of force majeure or the occurrence of an event beyond control, the WRTC 2018 Organizing Committee might implement changes, deletions or additions to the event and its rules. Additionally the WRTC 2018 Organizing Committee reserves the right to change the ruleset for technical, administrative or legislative reasons. These changes may be implemented upon short notice.

19. Conditions of entry

By submitting an entry in the WRTC Contest the competing teams confirm that:

1. The rules of the contest have been read and understood and they are bound by them;
2. They operated within the limitations of all rules stipulated;
3. They agree to make the log and the audio recording, as well as photo and video material of its operation prepared by the organizer available to the general public at the sole discretion of the WRTC Organizing Committee;
4. All actions and decisions of the WRTC Judging Committee are official and final.

Addendum

I. Frequency allocations in Germany

In Germany frequencies for the amateur radio service are assigned by the Bundesnetzagentur and are listed on this website: http://www.gesetze-im-internet.de/afuv_2005/anlage_1.html
As German laws are only written in German language, an excerpt of the relevant frequency allocations is provided here:

Frequency range
3,500 – 3,800 kHz
7,000 – 7,200 kHz
14,000 – 14,350 kHz
21,000 – 21,450 kHz
28,000 – 29,700 kHz

II. IARU Region 1 band plan

The IARU region 1 band plan is a recommendation for all radio amateurs how to use the bands, as revised at the Interim Meeting Vienna 2016, effective 01 June 2016. The latest version can be found on the website of the IARU: <http://www.iaru-r1.org/index.php/spectrum-and-band-plans/hf>

III. Poor Signal Policy

The transmit signal quality needs to follow standard engineering practices. The judging committee reserves all measures in case of excessive bandwidth in order to stop the interference.



Russia

AS #1

Callsign: **R8CT**

Team Leader

My career in Ham radio started in primary school. The first contacts were made in February 1975. In 1976 I taught myself Morse code. In 1982 I got my ham license with UA9CDV. I took part in expeditions 4K4/UA9CDV, 8Q7DV, 9M6AAT, P3A, 5B/AJ2O, C4N, PP5AA, P33W, P3N, H27A, WU3A, and CT9/R9DX. My primary interest in amateur radio is HF contesting and DXing in all modes.



Callsign: **UA4FER**

Team Mate

I learned CW at school club station and got my first ham license in 1974. In 1975 I started contesting at UK4FAV (later UZ4FWO) club station. All the rig and antennas were made by club members. In 1981 I took part in my first WRTC-style contest. Since then I worked many RRTC contests and was a participant of WRTC 2010 and 2014. In main DX contests I usually work in a team at P33W or EF8R. At home I am a member of RT4F contest club. It will be my third WRTC. This time I am pleased to participate in Asiatic Russia team with my team leader Oleg, R8CT.



Name: **Oleg Usov** – Age: 57
Calls used: UA9CDV, RI9C, C4N, P3A, 5B4/AJ2O, 8Q7DV, W3UA

Name: **Igor Korolkov**
Age: 59



Russia

AS #2

Callsign: **RC90**

Team Leader

From a young age I was engaged in sports, mostly technical types esp. motorcycle racing. After that time I went to the club radio station during a competition. The guys sat me down at the transceiver and I felt the same tension and adrenaline rush as in motocross during a dangerous turn. Since then, I became a radio amateur. My first call sign UA9UJO I received in 1978. Later I had to change call signs to UW9UP, RW9UP, UA9PC and now RC90. Mikhail Klokov UA9PM instilled in me love to be a contestman, he taught me many subtleties and technical knowledge on the development of radio engineering.



Callsign: **UA9PM**

Team Mate

I have been a ham since 1970 and was first licensed as UA9LAS in 1971 at age 16. Contesting became the major hobby in my life. During 1982-1989 as RZ0AA I was the leader of contest club UK0AMM, UZ0AXX, RK0AXX (RW0A now). I operated in many contests as RZ9UA from 1989 to 2008. In recent years, I have been active in contests from RZ9OZO, RC90, R9PA together with team leader Anatoly (RC90). I also was lucky enough to participate in the teams R3HQ, R9HQ, VP2E, P3N, CR3L, UP2L, EF8R, EB8AH. I participated as a competitor in WRTC 1996, 2000, 2002, 2014 and as a judge in 2010.



Name: **Anatoly Polevik**
Age: 60

Name: **Mikhail Klokov**
Age: 62
Calls used: RZ9UA



Israel

AS #3

Callsign: **4X6FR**

Team Leader

I first became fascinated by Amateur Radio in 1980, after visiting local hams during a field day operation. Very soon, I started learning for my license and became 4X6FR in 1982. This drew my whole family into the hobby: my father 4X6OM, my mother 4X6KT. My main interest became very fast chasing DX and contesting, many of them as Multi-single with Seth 4X1DX my contest partner for the last 35 years, lately under the call 4X7R. In 2001-2003 my contesting experience took a huge step forward after visiting Frank, W3LPL, and having an opportunity to operate a few remarkable contests with the W3LPL team.



Callsign: **4X1DX**

Team Mate

I was first introduced into the world of Radio in 1978 at the age of 12 by my father 4X1DR. I got my license at the age of 14, and very quickly started DXing and contesting. My father had built a most competitive station including multiple towers and mono banders. In the 1980's I came to meet Zvi Stessel, 4X6FR, my dear friend and contest partner for the last 35 years. Ever since the age of 14, I have been participating in many contests as single op and Multi single along with my contest-partner 4X6FR. In 2001 I was part of the 3B6RF DXpedition team to Agalega Island.



Name: **Zvi Stessel**
Age: 51
Calls used: 4X7R

Name: **Seth M Levitats**
Age: 51
Calls used: 4X6DX, N2BZQ



UAE



RUS

AS #4

Callsign: **A65BP**

Team Leader

Alexander is in radio sport since 1975, starting in the age of 12. He operated a long time as RV6LNA. From 1981 onwards he was doing only on-air contesting. Later he became KI0BP. Alexander also operated 5B4AIA from Cyprus. Now he is active from the United Arab Emirates using A65BP with many successful participations in big contests e.g. WAE, RDXC, CQWW or CQ WPX. He calls himself a radio-multiplayer.



Callsign: **RW4WR**

Team Mate

I started being engaged in Izhevsk radio-club "Volna" – UK4WAC in 1976. In 1978 I have been invited to team up Izhevsk mechanical institute – UK4WAC. I have received the first license in 1980 – UA4WBV and then received new call sign RW4WR in 1986. Most of all I love contests. I prefer working in MS category, but from time to time I am working as single operator. I was participant in WRTC 2002, 2006, 2010 and referee in 2014. 2002 I have been invited to team P3A (Cyprus), and the last 15 years I operated in all big contests from Cyprus.



Name: **Alexander Lunev**
Age: 54
Calls used: RV6LNA, KI0BP, 5B4AIA

Name: **Alexandr Orlov**
Age: 55
Calls used: K2AWR, UA4WR


Thailand

MAS **AS #5**

Callsign: **E21EIC**

Team Leader

I started ham radio in 1993. I was op from HS0AC from 1997-2002 in every contest. I've learned a lot from Uncle Fred K3ZO/HSOZAR. In 2003 I visited James Brooks, 9V1YC, one of my Ham Radio idol in Singapore and he showed me the VDO of WRTC 2002 in Finland. Three years later I got a ticket for WRTC 2006. I usually operate major contests from Laos as XW1IC. I enjoy operating CW and SSB, sometimes RTTY. I have been active from XZ0A, XZ1Z, E31A and A5A. I am the founder and owner of E2A and E20AX stations in Bangkok, Thailand. Also I am the Secretary of Radio Amateur Society of Thailand.



Name: *Champ C. Muangamphun* – Age: 41
Calls used: *KY1A, XW1IC, XW0YJY, XU7ADE and other*

Callsign: **9M2ZAK**

Team Mate

I was licensed as 9M2ZAK in 2005. My primary mode is CW. I enjoy DXing, contesting, experimenting with antennas and portable operations. My favorite HAM activities include homebrewing, chasing DX and rag-chewing. I am also QRV on all WARC bands, mostly in CW. In February 2018, I passed the FCC exam and got AG7ME as my extra class call sign. I am active in contesting, and 9M2SDX was my first contest team which I joined back in 2010. I have been actively involved since then. I've also joined other contesting teams such as 9M2SM, 9M2SD, 9M2M, and HSOZAR in many major contests.



Name: *Zaki Bin Din*
 Age: 39
Calls used: –


Japan

USA **AS #6**

Callsign: **JH5GHM**

Team Leader

I was licensed in 1978 and enjoyed part-time contesting for a few years. After entering the institute, I was much devoted to contesting especially to DX contest. The graduation of the institute brought me to long-term ham radio suspension over twenty years. In 2010, I resumed this fantastic and exciting hobby. The operating environment and style had fairly changed and so many things needed to be caught up with. Fortunately, I could be a competitor in WRTC 2014, but it could have been said the experience was almost like a practice for the next WRTC. There were still many things to be improved for WRTC 2018.



Name: *Katsuhiro 'Don' Kondou* – Age: 52
Calls used: *JH1GBZ, JE6RPM, KX3XX*

Callsign: **WA1Z**

Team Mate

I was exposed to ham radio and contesting at a very young age thanks to my Dad, NE1I. I was first licensed in November 1985 and, shortly after, I entered my first contest. Over the next several years, my Dad and I would do Multi-Single efforts. After sensing my passion for contesting, my neighbor, K1DG, introduced me to the KC1XX contesting team in 2004. I had the privilege of operating with and learning from an extremely talented group of contesters while participating in multi-ops from Matt's QTH. I've also had the fortune of participating in several multi-ops under the calls PJ4X and VP9I.



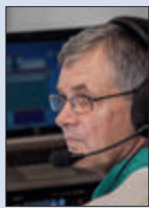
Name: *Bob Raymond*
 Age: 42


Lithuania
EU #1/1

Callsign: **LY9A**

Team Leader

SWL since 1970, my first CW QSO back in 1972, first personal call sign UP2BCR received in 1975. After entering Kaunas University of technology (former Kaunas Polytechnic Institute) and joining University radio club in 1973 I was hooked on contesting for the rest of my life. Most of the joy I got while contesting from my native club as a team member of UK2PAF, UK2PCR, UP1BZO, LY2ZO, LY7A, participating in Contest expeditions to Georgia as UF6A, RF3V, UP3BA/UF, to Qatar as A73A and from recent WRTC-training trip to DP4T. WRTC 2018 would be my 4th attempt.

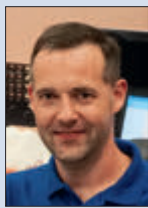


Name: *Gedimas (Gedas) Lucinskis*
 Age: 62
Calls used: *LY3BA*

Callsign: **LY4L**

Team Mate

I started ham radio in 1988. First contest was in 1989 CQWW SSB as UP1BXT with first night spent at school radio shack and using sleeping bags on school desks. It was cool! Now I realize why I am in love with team contesting. January of 1990 I received my personal ham radio license as LY2BUF. It became LY2UF soon afterwards, and LY4L in 2006. In 1993 I joined KTU Radio Club and met Algis LY2NK, my radiosport teacher. At KTU RC and at LY7A radio station the hobby transformed into a passion for radiosport. This WRTC will be my second Radiosport Olympic Games.



Name: *Mindaugas Jukna*
 Age: 43
Calls used: *LY2UF*


Estonia
EU #1/2

Callsign: **ES5TV**

Team Leader

I've got my own license in 1992 as ES5RTV and upgraded to A category a year later as ES5TV. In 1996 I started my contesting career taking part in operations from ES5Q/ES6Q. At the same time I started to build my station in the countryside close to Jogeva – now with a big antenna resulting in several great scores. I have had a chance of guest operating from the marvelous stations of Pekka, EA8AH; Bernie, ZS4TX; Arcala, OH8X and Ranko, 4O3A. Being a member of VP6DX expedition in 2008 was an experience of a life time. I took part in WRTC 2006, WRTC 2010 and 2014, winning the silver medal in 2010.



Name: *Tonno Vahk*
 Age: 40
Calls used: *ES1TV, ES6TV*

Callsign: **ES2RR**

Team Mate

I started ham radio at the age of 15 at the local radio club UK2RDX. I entered my first CQWW Contest as part of the multi-op team. Even though I received my first call sign UR2RRR I had already been spoiled with large Yagis. In 1997 I went to USA and got involved in contesting again inspired by good friends W9YS, N9XBG and W9IW. Upon return to Finland in 1998 the OH2U crew kindly took me in and my contesting career continued at Paksalo. Throughout the last decade I've had the pleasure of being hosted numerous times in Canary Islands by Pekka, EA8AH. Also I was a part of ES9C, OH8X and CR2X.



Name: *Toivo Hallikivi*
 Age: 54

 **Finland**

EU #1/3

Call sign: *OH6KZP*

Team Leader

I've been a ham radio operator since 1994, and contesting has always been an important part of the hobby for me. I took my first forays into more serious operating in the late 1990s before a long QRT period. The flame was lit again in 2006 and it's been a lot of fun and a great privilege to guest operate at a number of stations since. In addition to recent operating as OHOX, my most interesting visits have been to the Azorean superstation CR2X. From there I hold the current CQWW and CQWPX European SOAB HP records on CW and SSB. This will be my second WRTC, and I'm excited about meeting many friends.



Name: *Kim Östman*
Age: 40

Call sign: *OH6UM*

Team Mate

Ham radio has always been part of my life. After I met my age-mate Veijo OH6KN we started competing in Morse code speed and I finally got hooked. I started my ham career as SWL OH6-111, got my license OH6UM in 1974, and since that practically lived on bands and in contests for several years. During my 44+ years of contesting I've gladly had opportunities to operate both single-op and multi-op from several great stations. This will be my fifth WRTC. I have had the honor to join WRTC earlier 3 times as a competitor (1996, 2006, 2010) and in 2002 (Finland) as the Competition Co-Chairman.



Name: *Pasi Luoma-aho*
Age: 58
Calls used: *OH2IW*

 **Sweden**

EU #1/4

Call sign: *SM5AJV*

Team Leader

My interest in radio started with SWLing at 12 years age using my parents' old tube radio and a short piece of wire. At the age of 14 the local radio club had an exhibition during the weekend and I found my new love: Ham Radio. Soon after I started to learn CW and at the age of 15 I got my own call sign SM0AJV. Only after a few days on the air with my XTAL transmitter I entered my first contest and was hooked for the rest of my life. I have been the contest editor for the Swedish ham magazine for ten years and I am now team leader for the SAC Contest Committee and a member of SK3W.



Name: *Ingo Fogelberg*
Age: 57
Calls used: *SE5E*

Call sign: *SM3SGP*

Team Mate

I started with ham radio and contesting in 1987, and have been active continuously since then. Since 1995 I have been building on and operating at SK3W, 1h30min drive from Stockholm, where I live and work. I like experimenting with the latest SDR technology and remote operation, and keep the station fit and up and running. I have operated from various locations of the world, mostly during business trips with Ericsson working with 2G/3G/4G and soon 5G. I participated in WRTC 2002 in Finland.



Name: *Gunnar Widell*
Age: 46
Calls used: *SK3W, SG3P*

 **France**

EU #2/1

Call sign: *F8DBF*

Team Leader

I began amateur radio in 1999 at the age of 19 with call sign F4DBF (CEPT class B) and discovered 6 meters (magic band) and also some 2 meters. I learned CW and obtained the CEPT class A with my current call sign F8DBF in 2002. I am a member of F6KHM radio club better known with the contest call TM6M. We began to participate in HF contests and since 2006 in all major events (WW, ARRL, WPX). The continual improvement of the station with F5TTU Xavier as the main driver, results in the best ranking and often good European place. I really enjoyed my participation in WRTC 2014 in Boston.

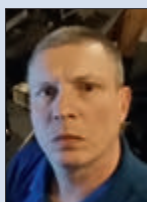


Name: *Sebastian le Gall*
Age: 39

Call sign: *F1AKK*

Team Mate

I'm 40 years old. I've got my ham radio license in 1995 at the age of 17. I was first interested in VHF, UHF and SHF. In 1997 I came for work to Brest and in 2003 we started contest on HF with low setup. We saw that our place was a good QTH particularly for North America. We improved our station with our excellent technician Xavier (F5TTU). We were in Boston as competitors as W1S in 2014. It'll be nice to come back in the game in Germany, seeing again lots of friends we can see only every 4 years.



Name: *Olivier Seizelet*
Age: 40

 **Belgium**

EU #2/2

Call sign: *OR2F*

Team Leader

I had received my first radio amateur C-license in 1979 (13 years old) when I operated from the club station LZ2KSB (member of BFRA) in my home town Balchik. In that time I was fortunate to be introduced to and trained in HF-contesting by LZ2RF (sk) and LZ2ZZ (sk). Since 2008 I live and work in Belgium. Immediately I became ON8LDS and OR2F a bit later as well. Radio is my first love and certainly it will follow me to my last days. Radio made me and keeps making me who I am in my life, not only on contest weekends! I'm mostly interested in HF-contesting.



Name: *Lyubomir (Leo) Slavov*
Age: 52
Calls used: *ON8LDS, LZ6AJ, LZ6N, ex.LZ2LDS, ex.LZ2L*

Call sign: *ON5RA*

Team Mate

Since the age of 15 I was already fascinated by listening on short and medium waves. Followed by several technical and legal setbacks, it occurred to me to become a licensed radio amateur. Since I passed my HAREC license back in 1991, a new world opened up. During my free time I try to participate in contests as a team member of OT5A SSB Multi-Multi, ON6BR my Local club station, and team OP4K SSB/CW. A few years ago I had the chance to meet my HAM friend Lyubo (OR2F). Together we have spent many hours in contests and technical discussions about antennas, radios and operating practices.



Name: *Pascal Lierman*
Age: 52

France

EU #2/3

Call sign: F4DXW

Team Leader

I have been a ham since 1998 and have activated some countries (Fiji island 3D2VS and Rotuma Island 3D2VS/P). I also lived for two years in the Republic of Djibouti where my call sign was J28VS (from 2000 to 2002). I work all major contests from TM6M radio club F6KHM in Brest. The WRTC is a great experience, and I am very happy to have been selected. I look forward to meeting some of the best contesters. Thank you to my friend F8CMF for agreeing to be my teammate and thank you, organizers of the WRTC, for your work.



Name: Stephane van Langhenhoven
Age: 41

Call sign: F8CMF

Team Mate

I'm 34 years old and I was first licensed in 1995 at the age of 13 (FB1CMF). I then had to wait 3 years to reach the age required to get the extra class license (F8CMF). I quickly became interested in DXing and contesting on the HF bands. I then started focusing my effort on building an SO2R station with a single tower at my home QTH. During the past years I also operated from FY5KE, 4U1ITU, TM0HQ, TM2Y, TM6M and TM1X during major contests. Favorite modes are SSB and CW. This will be my second participation in a WRTC. First WRTC was in Boston in 2014.



Name: Sebastien Bajulaz
Age: 35

Ukraine

CAN EU #3/1

Call sign: UR0MC

Team Leader

I'm grateful to my father Vladimir, UT3MD (ex-RB5MDV) who introduced me to ham radio. I was 12 years old and I was a very active operator of the UK5MDC Radio Club before getting my own UB4MPC call sign in 1984 at the age of 14. Top band quickly became my favorite one and I completed 160m DXCC in 1986. In 1993 I changed to my current call UR0MC. In 2004 I returned to active contesting using UR0MC, UW2M and EO5M and at the same time started to build my big country-side contest station. I was part of the C93DY/C91CW (2005), EY0R (2006) and N8S (2007) DXpeditions.



Name: Roman Tkachenko
Age: 48
Calls used: UW2M, AB9OF

Call sign: VE3DZ

Team Mate

I am ham radio operator and active contesteer since 1974. I graduated from Kiev Polytechnic Institute in 1984. In 1998 I moved to Canada where I started as VE3UZ. In 2002 I finally got VE3DZ. Also UT4UZ, VE2IM, 8P9AA, PZ5T, ZF1DZ, 6Y2T, HC2TDZ, V31UZ, VO1AAM, etc. I operated from 30 DXCC countries. I have been going to Zone 2 to participate in the CQ WW Contests for 19 years in a row. This is my 7th WRTC. I consider WRTC to be the most fair and equal ham radio competition.



Name: Yuri Onipko – Age: 57
Calls used: 6Y2T, 8P9AA, HC2TDZ, PZ5T, UT4UZ, VC3T, VE2IM, VO1AAM

Slovakia

EU #3/2

Call sign: OM3BH

Team Leader

I started with Amateur Radio in 1978. My first activities began from club station OK3RRC. When I was 15 I got special call sign for young operators OL9CPG. Later I got call sign OK3TPG. During my studies at the Slovak Technical University I was very active from the student club station OK3KFF. Since 2004 we have been operating from our new location OM8A as well as from other countries during big contests. I took part in WRTC 2000, 2010, 2014.



Name: Rastislav Hrnko – Age: 50
Calls used: 7W2OM, 9A1V, 9A8RR, CT9M, CR3A, CR2X, D4C, IB0R, IS0/OM8A, OE3K

Call sign: OM3GI

Team Mate

I received my first license in 1975 when I was 15 years old, and I started with small homemade station on the 160m band. My primary interest in amateur radio is contesting. I took part in many contests, mostly as a member of OM8A team. I had the opportunity to operate from foreign contest stations and achieved good results as 7W2OM, CT9M, CR3A, CQ3B, D4C, etc. I was a competitor at WRTC 2000, 2010 and 2014. I look forward to meet a lot of friends and to be a part of the great amateur radio event.



Name: Jozef Lang – Age: 57
Calls used: 7W2OM, 9A1V, 9A8RR, CT9M, CR3A, CQ3B, CR3DX, D4C, IB0R, IS0/OM8A

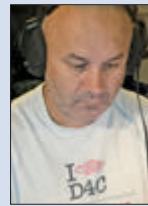
Slovakia

EU #3/3

Call sign: OM2VL

Team Leader

I was first licensed in 1985 as OL8CTX at the age of 15. I am a member of the OM8A contest team. I was also a team member of 9A1V, 9A8RR in IOTA contests, D4C in CQWW CW 2013, CR3A CQWW CW 2014. My major interests are contesting and DXing. I am taking also part in many US QSO Parties. I have confirmed 2801 countries and my goal is to reach all 329. I was a competitor at WRTC 2010 in Moscow and in 2014 in Boston. I am looking forward to see old friends and to meet new friends.



Name: Laszlo Vegh
Age: 47

Call sign: OM3RM

Team Mate

I was first licensed in 1972 as OL8CCJ. My previous call signs were OK3CJK, OK3CEM, OK3RM. I am a member of the OM8A contest team. I participated in a lot of contests with lots of teams like 9A1V, 9A8RR, D4C, CR3A, 7W2OM, IS0/OM8A, IB0R, IC8R or IS0/OM8A. My major interest is contesting on HF and also on VHF. I was a competitor at WRTC 2010 in Moscow and in 2014 in Boston.



Name: Tibor Ferenec – Age: 62
Calls used: 7W2OM, 9A/OM3RM, 9A8RR, CR3A, CT3/OM3RM, CT9/OM3RM



Czech Republic

EU #3/4

Callsign: OK2ZI

Team Leader

I received my first license and call sign OK2XTE in 1993 for VHF. In 1995 I passed a CW exam and upgraded my license for all bands. In 1998, after two and half years, I received 250 confirmed DXCC and was allowed to change my call sign to the shorter OK2ZI. From 1998 to 2012 I was VHF/UHF/uW Manager of the Czech Radio Club and representative at IARU Region I meetings. I am the founder of OL5Z and OK5Z contest stations and guest op at OK5W. We won several OK VHF/UHF/uW championships. I won OK HF Championships, OK/OM DX contests and several international contests on many occasions.



Name: Karel Odehnal

Age: 47

Calls used: OK7Z, OK5Z, 5T5OK

Callsign: OK2ZC

Team Mate

I was first licensed in 1993 as OK2BEE. Later I changed my call sign to OK2ZC. In contests I operate as OK3C, mainly in CW and RTTY, managing about 170000 QSOs from 1993 and several thousand QSOs as OK5Z and OK5W. I completed DXCC Honor Roll #1 and I have got several plaques from CQ WPX and CQ WW. I was a member of OZ/OK5DX/p, Z66D expeditions.



Name: Ludek Odehnal

Age: 44

Calls used: OK3C



Ukraine

EU #3/5

Callsign: US2YW

Team Leader

My father Oleg, UT0YO (sk) was a member of Chernivtsi Regional Team on Ukraine radio team championship (VHF) before I was born. Of course from my early childhood on I had a dream – to get into the regional team and participate in competitions. In 1988 I got first licensed as UB5YAR, and in 1989 at age of 15 I took part in VHF Team championship of Ukraine. In 1990 was first HF Ukraine RTC attempt. In 1994 I got the new call US2YW. Since 1996 started own activity in VHF contest, occasional take part on most HF contest. A visit to UZ2M was a turning point from VHF to HF.



Name: Vyacheslav (Slava) Zhuk

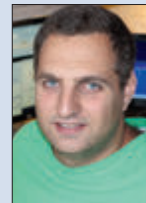
Age: 44

Calls used: UW5Y, ZA/US2YW, EI/US2YW, SV2/US2YW

Callsign: UW7LL

Team Mate

I got involved with Ham Radio when I was 11 years old in my home town of Nova Kakhovka, Kherson reg., Ukraine. In 2000 at the age of 12 I received my first license UR5GKV. Contesting and DXing quickly became my favorite hobbies and in 2003 when I was 15, I changed my call to UT7GX. In 2008 I changed call to my current UW7LL. In 2011 I was assigned to Ethiopia for work and I was pretty active first from ET3AA. In the recent years I was pretty active in contests from UT2GWW/UT2G in Kherson city. My favorite modes are SSB and CW though sometimes I may be heard on different digital modes.



Name: Yaroslav Oleynik

Age: 30

Calls used: UR5GKV, UT7GX, UZ2LL, UV1G, US7L, SP1/UW7LL, SV9/UW7LL



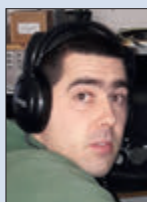
Spain

EU #4/1

Callsign: EC2DX

Team Leader

I started on 27Mhz in 1992 and got my first license in 1993. My first contest was ARRL SSB 2006. In 2009 I started building my own station. I am a founder of EE2W. Every hardware is homemade, so every weekend I drive 400km to improve the station. Thanks to EA2BNU to remember me the CW, EA2ET for the technical support and to other ham radio friends that help me with the work at heights, especially to EA2AAZ, EA2NS and EA5KA. The door of EE2W is open to everyone. Since 2009 more than 100 operators came to take part in contests.



Name: Imanol Antonanzas

Age: 39

Callsign: EA5KA

Team Mate

Born in 1985 I started with ham radio at the age of 8, with my father's support, EA5IBR. In 1998 I got my first license EC5ACZ (rookie license) learning CW by myself and in 2000 I got my extra EA5FGE, changing it in 2005 to my final nowadays call, EA5KA. Contesting firstly on the 160M band with EA5RU, several years. In 2010 I joined EC2DX for continues with the big contest station building. Interested in DX hunting but in the last 8 years my priority was contesting, most of the time in multi operations. Travel around the world lover, trying to share tourism with radio operations.



Name: Raul Blasco Villarroya

Age: 33

Calls used: ED5N



Italy

EU #4/2

Callsign: IZ3EYZ

Team Leader

First QSO with an A7 on 20m SSB in July 1993 at age 9. I started DXing with very limited equipment: 100w, trapped vertical and wires, no cluster. In 1999 learnt CW by myself listening to real radio stations on HF. Discovered contesting for the first time reading a CQ Magazine 9/1995 article about CQWW SSB 1994 results. In IARU 2001/2002 I did my first SO2R experiments. My elmering had always been reading magazines, listening to others operating on the bands, playing with PED contest simulator, etc. Nowadays, 15 years later, I find myself still hooked to DXing/contestng.



Name: Matteo Marzilli

Age: 34

Callsign: IK4VET

Team Mate

I am a ham since 1992 and contester since 1998. As a founding member of ARIMODE-NA I operated as IO4T (now QRT). At this location, many experiments, contests and innovations have been played, rising up friendship, knowledge, experience and new operators. I operated from many Italian contest stations: often IR4X in multi op category. Others have been IO4T/IQ4AX, IR2C, I4LEC, IO5O, I2E, IR9Y, IQ1RY/IO1T, IO4W, IR4M, IK2YCW. A also took part in SOAB from I4LEC.



Name: Andrea Amati

Age: 43

Calls used: IO4T


Spain
EU #4/3
Callsign: EA2OT
Team Leader

At the age of 12 I bought a walkie-talkie and sold it to buy a CB radio. I spent some years DXing on CB and got my first Ham License in 1998. My first contest was CQ WW SSB 2003. Multi operations have been the most interesting part of contesting during all these years because I learnt a lot from others, and friendship is for sure the best part of this hobby. Thanks to my CW Elmer, EA2BNU. CW is my preferred mode. In 2015 I built a station from scratch. The 1st contest from this QTH was the RDXC with just a small tribander and vertical. I kept working hard and qualified for WRTC 2018.



Name: Jon Zumalabe
Age: 36
Calls used: EF2A

Callsign: EA8RM
Team Mate

I started on radio (CB & VHF) in 1990. In 2000 I started to visit the local club EA8URL. There I met many friends and my mentor EA8ZS, who invited me to operate my first contest from his home. I remember to visit sometimes the OH2U team in Gran Canaria operating from Sardina (EA8BH). In 2010 I was invited to operate RDXC from RZ3AXX winning SOAB HP. One of the best experiences was to feel WRTC 2010 as competitors with my good friend Marino EA8DP. We had a great time in Russia with all competitors. I had the pleasure to be one of the organizers of EF8HQ team winning HQ IARU contest 3 times.



Name: Juan Hidalgo
Age: 42
Calls used: EF8R, EF8U, EA8CAC, CN2RM


Croatia
EU #5/1
Callsign: 9A1UN
Team Leader

I got in touch with ham radio almost when I was born. My dad is 9A2RD and my grandfather used to be 9A2BN. As a little kid I was always interested in what they were doing for hours and hours in that shack. My first contest was a VHF contest which I actually won at age 11. Since then I'm active in most major contests. Around 2000 we started building an HF contest station on a hill outside our home town. We usually participate as Multi-Single, 9A1P in most contests, but have tried all multi-operator categories. In 2006 I participated in my first WRTC in Brazil, as one of the youth teams.



Name: Davor (Dave) Kucelin
Age: 33

Callsign: 9A6XX
Team Mate

In 1994 I started regular Morse code courses and in May 1995 I passed my first amateur radio exam at age of 12. In 1996 I started with first HF contests and by 1998 I have been active in over 50 contests from my club. In 1997 I received my first personal call 9A6NHH and later 9A6XX. In 1999 with few other active young contesters we started the WWYC group. I was a guest at WRTC 2000 to meet lots of contest friends. With Dave, 9A1UN, we started building the 9A1P contest station. My previous WRTC experiences include WRTC 2006 with DJ1YFK as PT5V and then in WRTC 2014 with 9A1UN as K1G.



Name: Hrvoje Horvat
Age: 35


BIH

CRO EU #5/2
Callsign: E77DX
Team Leader

Started with Ham radio 1987 in Prijedor Club YU4JHI/YZ4X. Got into contesting in 1998 mostly in local HF contest and VHF! My first Single Op entry was on low power 80m in WPX SSB 1989. 1992 I moved to Austria and started to operate from OE1XTU/OE1A. 2003 building together with OE4RLC my first "serious" contest station OE4A. In 2007 started to build E7DX. I was QRV as E7DX in almost all big contest in MS or SOAB claiming many EU records and some WW wins! Also I helped Ivan OE1DIA to build up OE3K where I did some contesting as well. I was part of D4C, 4O3A, 9A1P, CN3A and ED8X.



Name: Emir (Braco) Memić
Age: 44
Calls used: OE1EMS

Callsign: 9A5K
Team Mate

I started with ham radio in 1988. After two years, I was involved in contesting and have enjoyed it very much for more than twenty years. I am also working on software development for ham radio contesting. Worked in many multi op teams during the years, such as 9A1A, 9A7A, 9A9D and E7DX. I also was building a small SO2R contest station. This will be my third WRTC. The first one was 2006 in Brazil and the second in Boston 2014.



Name: Kresimir Kovarik
Age: 44
Calls used: JT5KK


Slovenia
EU #5/3
Callsign: S50A
Team Leader

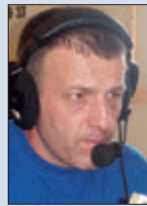
Started with ham radio in 1963 and contesting was one of my early love. YU3EY was former call (1966 to 1986), then YT3AA to 1992. S52AA and S50A followed in newly independent Slovenia. Formerly I was one of the founder, member and president of YU DX club (1972 to 1991) and founder and president of Slovenia contest club (from 1993). In 50 years of ham radio I participated in all big worldwide and local contests and was happy to be part of great contest teams all over the world. The highlight of ham radio career was an organization of WRTC 2000 in Slovenia. I have participated in all WRTCs.



Name: Tine Brajnik
Age: 69
Calls used: K3SLO

Callsign: S57AW
Team Mate

I have been active in amateur radio since getting my first license back in 1987 at the age of 17. Was holder of YT3VV (1987-1992) and S53G (1993-1995). I operated at A61AJ, CN3A, ZA/S57AW and others. Active in S50G contest team for the last years and we achieved some nice results. My primary interest is HF contesting. WRTC 2018 will be my fifth WRTC which I will attend, had different roles in previous WRTCs. WRTC 2018 will be my third chance to compete in a team together with S50A. I am an active Slovenia Contest Club member and SCC Contest Manager.



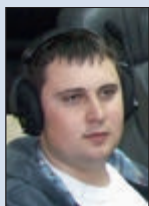
Name: Robert Bajuk
Age: 47

 **Russia** **EU #6/1**

Callsign: RW7K

Team Leader

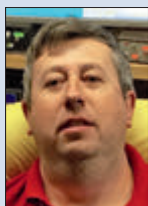
In ham radio from 1994. My father UU8JK was a radio amateur at his youth, so I became a radio amateur also very early. I took part in my first contest in 1995. My teacher of contesting and Morse code was Andy UU0JM and of course my father. My favorite band is 160m. Favorite contests are WEADC, CQWW, CQWW 160, CQWPX and RDXC. From 1996 I've taken part in hundreds of contests. So I really like this hobby and it is a part of my life! I was competitor in Brazil during WRTC 2006, Russia during WRTC 2010 and Boston during WRTC 2014.



Callsign: UB7K

Team Mate

I was born in 1973 in Crimea USSR. I started ham radio in 1987. My first QSO was in 1987 from the club station of UB4JZV. From 1988 I began to take part actively in international contests. In 1990 I got the personal call sign UB4JKO. In 1994 I became UU0JM. My favorite contests for many years are WEACW, CQWW, CQWP and RDXC. My favorite modes are CW and SSB. I took part in WRTC 2014 as a competitor.



*Name: Andy Kotovsky
Age: 33
Calls used: UU4JMG*

*Name: Andy Kazantsev
Age: 45
Calls used: UU0JM*

 **Russia** **EU #6/2**

Callsign: UA2FB

Team Leader

I started ham radio as an SWL in 1981 and got my first call sign RA2FDE in 1982. Later I became UA2FGA in 1986 and UA2FB in 1988. I hold also CN2FB and 9A8UA. I am a member of the UA2 CONTEST CLUB. I operated in many contests from RW2F, UA2F, C42A, T70A, CN2A and CN2AA. With CN2AA we set three M/S world records and two M2 African Records.



Callsign: RA2FA

Team Mate

I started ham radio as an SWL in 1978 and got my first call sign UA2FEM in 1982. I operated in many contests from RW2F, P33W etc. My profession is radio engineer, I now manage my own company (heating equipment).



*Name: Dmitri Gorshkov
Age: 53
Calls used: 9A8UA, CN2FB, UA2K, UA2KK, UA2KW*

*Name: Dmitri Grigorev
Age: 55*

 **Russia** **EU #6/3**

Callsign: RW1A

Team Leader

I was 15 years old when I read a special invitation from the youth radio station UK1AFA to study ham radio in my school. I started together with Andrey, RV1AW. On the air since 1981 as operator of UK1AFA (now RZ1AWO) with Boris UA1AAF as a chief and trustee (1981-1991). Since 1991 one of the active operators (and now chief operator) of RZ1AWT, better known as RU1A Contest Club. First call was UA1AKC, then RW1AC. Changed call to RW1A in 2012. I have competed in five WRTCs: 1996, 2000, 2002, 2010 and 2014. I became WRTC champion in 2010 as a team with RA1AIP (now RA1A).



Callsign: RA1A

Team Mate

My old call was RA1AIP. Member of RU1A Contest Team since 1999 where we built a big contest station about 200 km from St. Petersburg. I am a CW fan and amateur radio traveler active as R1MV, PJ2T, ZW5B, P33W, 3V8BB, 6Y1LZ, etc. As a member of the ED8X team I have operated the CQWW several times from the Canary Islands. A participated WRTC 2010 in Moscow and WRTC 2014 in Boston, earning the gold medal in 2010 with my team mate Vlad, RW1A.



*Name: Vladimir Akesnov
Age: 51
Calls used: RW1AC*

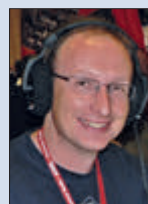
*Name: Alexey Mikhailov
Age: 39
Calls used: EA8MAP*

 **Germany** **EU #7/1**

Callsign: DJ5MW

Team Leader

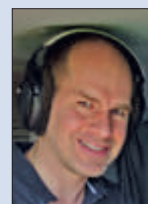
I entered the ham radio world in 1987 at the age of 15 and soon was infected by the DX and Contest virus. First DXpeditions were made to HB0, which is very close to my QTH and to Andorra as C30EHA. Also CQWW expeditions to Vienna, activating 4U1VIC were fun. The highlight was obviously participating 3 times from CN8WW in 1999 and 2000 in CQWW. Since 2002 I was able to build our club station on a mountain-top QTH in southern Germany for many successful Single-op entries from there. My preferred mode is CW, but you can also hear me on SSB.



Callsign: DL1IAO

Team Mate

I received my first license in 1990 at age 14. I'm thankful to my dad Ralph DJ1DB who helped to get me on the air while still in school. Later, Roland DK3GI invited me to my first ever multi-op and showed me how to really operate a contest. When I was 21 he selected me as a teammate for WRTC 1996 and again in 2002. I have been contesting together with Manfred DJ5MW from early on. I hold SA3CWW and SM9A as call signs in Sweden. I got introduced into ophthalmology by Alex W2OX/V47KP which is one of many examples how contesting and the resulting international friendships have influenced my life.



*Name: Manfred Wolf
Age: 47
Calls used: –*

*Name: Stefan von Baltz
Age: 43
Calls used: SA3CWW, SM9A*


Germany
EU #7/2
Callsign: DL4NAC
Team Leader

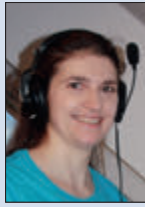
I was licensed in 1981 at age of 14. I am co-founder of Bavarian Contest Club. In the late 90s I worked as main organizer of some big BCC CQWW-Multi-Multi-activities like LX9BV and LX8A with the goal to set European records. We also tried to invite hams from Y2/GDR, but this was not possible in 1988. So far I worked about 150.000 contest QSOs with more than 50 different call signs. I am a holder of some records in CQWW single op and multi op category. During WRTC 2014 I visited KC1XX for the contest and later the closing ceremony of WRTC 2014. This was a big motivation.



Name: Martin Riederer
Age: 51
Calls used: DC4A, DA0AA

Callsign: DL8DYL
Team Mate

I got my license in 1988 as Y89RL at age of 14. My passion are high speed telegraphy and contesting including several operations abroad (J79RL, A35XM, 9Y4/, OE/, EA6/, EA8/ or W1/DL8DYL). As a team member of DF0SAX (now DA2X) I enjoyed to operate in multi-op teams. I am the head of the local radio club. Since 2016 we force ham radio training where I work as organizer and teacher. As a member of the directors board of the Bavarian Contest Club I am proud to support our great hobby.



Name: Irina Stieber
Age: 45


Germany
EU #7/3
Callsign: DL2CC
Team Leader

I'm licensed since 1983 and started as a CW enthusiast and High Speed Telegraphy competitor. Soon I discovered the thrill of contesting, learning how to work a contest as a regular member of the contest teams at ON4UN. I am still a referee at the IARU world championships in HST and like CW most of all. My home is in the south of Germany where I recently moved to the countryside to have a place for our hobby. It's a great honor to be participating at a WRTC event again after so many years – the bronze medal in Finland in 2002 was a long time ago.



Name: Frank Grossmann
Age: 49
Calls used: DQ2C

Callsign: DK9IP
Team Mate

Introduced into ham radio by my dad (DL9OT, SK). I learned CW at age 14 and was active as SWL until getting my license at age 16. I've been contesting ever since, with high priority on CW. I'm a member of the Bavarian Contest Club since 1988. I have met many fine hams around the world and contested from many stations. A highlight is always to operate from CR3W with several top result in CQWW CW. For WRTC 2014 I was selected by Suad (DK6XZ) as team mate finishing at 8th position.



Name: Winfried Kriegl
Age: 58
Calls used: KH7CD


USA

ROU NA #1/1
Callsign: K1LZ
Team Leader

Krassy received his first license in 1969 while in sixth grade (12 years old) where he operated from club stations LZ1K CZ and LZ1K DP in Bulgaria. He received the call sign LZ1SA after passing Level C, B and A examinations in 1996. George (LZ1GS) was his mentor from the beginning. Other call signs were N1QQO (1991), AA1ND and then K1LZ (2006). He was a key player on the N8S Swains Island (A2007) and 5A7A Libya (2007) DXpedition teams. He was also a member of the ZX0F, CY9SS, TS6A, and YI9PSE expeditions. Krassy is very active from his location in Jamaica 6Y1V or 6Y1LZ and his own QTH in USA as K1LZ.



Name: Krassimir (Krassy) Petkov – Age: 61
Calls used: LZ1SA, AA1ND, 6Y1LZ, JT5LZ, VY2LZ, 3D2LZ

Callsign: YO9GZU
Team Mate

Tibi got his license at age 16 in 1999. He has always been focused on contesting. In the past he had the opportunity to operate from great contest stations like 4O3A, ED8X or LX7I. The best long time contesting experience was being part of the YR7M team. He was competitor in 2006, 2010 and referee in 2014.



Name: Tiberiu Tebeica
Age: 35
Calls used: W9GZU


USA

BUL NA #1/2
Callsign: LZ4AX
Team Leader

I first got introduced to HAM radio at age 13 at the club station in my hometown at LZ2KWR. Later I got involved in starting LZ9W and now, 20 years later, it is still the first place I visit when I go back to LZ. In 2001 I moved to the US, where I met the famous WA3FET, who invited me to operate the big contest station. In the next 17 years I operated K3CR in more than a 100 major contests. Maintaining and operating this huge station was a unique learning experience and has left many lifelong memories. After Brazil and Boston, this is going to be my third, and most probably last, WRTC.



Name: Alexander Avramov
Age: 49
Calls used: AA3AX, WF9A, 3W3XX, 3W4XX, 9N7AE

Callsign: LZ3FN
Team Mate

First got into the hobby in 1987 as a 16 year old teenager. It was a strange story. The chief of local radio club LZ1KSF threw me the keys and said, "Come when you wish." I knew only where the POWER ON button of the radio was. Little by little I began to make my first steps into ham radio. The first personal call sign was LZ3FN in 1991. I have many years of contesting at LZ1KBB (LZ7M), having done this together with LZ4AX, LZ3SM, LZ5VK and other good friends. Since then I have passed through several club stations, visited many countries, and taken part in the last two WRTCs.



Name: Christo Ignatov
Age: 47
Calls used: SW9AA

 USA

NA #1/3

Callsign: **KE3X**

Team Leader

I got my Novice class license as a 12-year old in 1974 as WN1UUA, and operated briefly from Mexico City as XE1/NV1P in the early 1990's. I returned to radiosport in 2009 to share the sport with my teenaged sons while living in HB9. I am a past President of Potomac Valley Radio Club and operate from a small city-lot station, as well as occasional guest-ops from local PVRC stations including N3HBX, N4RV, NR4M and W3LPL. I competed at WRTC 2014 in Boston with K0DQ, and represented the USA at the HST World Championships in LZ in 2009 and DL in 2011.



Name: **Kennan (Ken) B Low**
Age: 55
Calls used: NV1P

Callsign: **KD4D**

Team Mate

I received my first license in 1971 as WN4YLN when I was ten years old. I got involved in Field Days and started doing some radio contests. Then WV3R invited me to visit him at KG4 and participate in a Multi-Single for CQWW CW. Because of that experience, I had the opportunity to operate at W3LPL station and joined the Potomac Valley Radio Club. W3LPL and N3HBX have been particularly kind and helpful, giving me many opportunities to operate from their stations as a single OP and part of multi-op teams. I've also done some DXpeditions for the WAEDC from KP2, VP5 and EA8.



Name: **Mark Bailey**
Age: 57
Calls used: VY2MT, VP5Y, PJ2M

 USA

 PUR NA #2/1

Callsign: **AD4Z**

Team Leader

My passion for radio began at the age of 6. At the age of 11, I obtained my first license as HI3JEI and immediately became a con-tester and later HI3JH and HI3K. After moving to USA I received AD4IL and AD4Z. I presently reside in Miami, FL. I am an active DXer and Contester. For major competitions I operate from Loma del Toro (HI3A) where we have a big antenna farm on the top of a 4000 foot high mountain. In the USA I normally operate as part of multi-op teams. For the past 3 years I have been operating the station of my friend and partner in WRTC, Dan Thompson (W4UH).



Name: **Julio Henriquez**
Age: 60
Calls used: HI3A

Callsign: **NP4Z**

Team Mate

I have been licensed in 1986 and operated for the last 32 Years of my life and I plan to continue doing so while I have my strength. I enjoy all areas of Ham Radio, particularly building the station and contesting. I'm fascinated by the field activities and testing antennas in different settings and propagation. In 2009 I was team member of the DXpedition K5D to Desecho Island.



Name: **Felipe Hernandez**
Age: 53
Calls used: KP3Z, V43Z

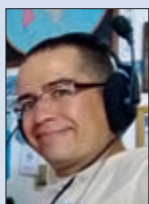
 USA

NA #2/2

Callsign: **N4YDU**

Team Leader

I was first licensed in 1989 as KC4MCH thanks to the help of my father (N4PY). The contesting bug bit me immediately and continues through today. After teaming up with N3KS for WRTC 2014, many excellent operating opportunities have developed, including several operations in various categories from TI5W. I enjoy operating from my home station in NC, as well as multi ops from N3ND and N1LN. Also of late, I have had the opportunity to use the Remote Ham Radio network in several contests. In addition, HA1AG was kind enough to host me for IARU HF Championship to participate as HG2U in July of 2017.



Name: **Nathan (Nate) Moreschi** – Age: 43
Calls used: TI5/N4YDU, HA/N4YDU, HG2U

Callsign: **N3KS**

Team Mate

Kam passed his license exam in 1975, receiving the call sign WA3ZNJ. In 1979 he obtained the call N3KS. He joined the Potomac Valley Radio Club (PVRC) in the early 1980's, he was primarily a DXer and did not begin contesting until 2004 – when he entered the ARRL Sweepstakes. He was soon invited on his first contest expedition, FS5UQ, and has had a high interest in contesting ever since. Lately he has spent time building a station in Costa Rica, using the contest call TI5W. He took part in WRTC 2014 in Boston as a competitor.



Name: **Kamal Sirageldin**
Age: 58
Calls used: TI5W, TI5/N3KS

 USA

NA #3

Callsign: **N4TZ**

Team Leader

I got first licensed in 1961. Active on-and-off for many years because of frequent moves. Over the years my interests in ham radio have evolved from traffic handling nets to DXing to contesting, which requires scheduling occasional blocks of time which can be planned far in advance. I am the director of CQ WPX SSB/CW contests since 2013. My six primary contests for many years have been the CQ WW, ARRL DX, and CQ WPX Contests. I was a competitor at WRTC 2010 (Russia) with Marv, N5AW, as my teammate. The process of WRTC qualification led me to try many other interesting contests e.g. RDXC and WAEDC.



Name: **Terry Zivney**
Age: 69

Callsign: **N1UR**

Team Mate

An engineer by training, always in the business of applying advanced technology for electronics companies. After numerous stints with large industrial companies, I now run a 50 person Power Electronics company in Vermont, USA. Married with 3 adult children. My wife Christine is KB1PQN. We have DX'd from 9M6 Spratly. I have operated from A52, XX9, and others. Contesting seriously since 1997. Holder of Low Power USA records. Best win was CQ WW SSB World Low Power.



Name: **Ed Sawyer**
Age: 56
Calls used: K8EP, XX9TEP, A52UR, PJ2E, C6ARS


USA
NA #4
Callsign: N5AW
Team Leader

I was first licensed in 1955 as KN5ABV. I became N5AW in 1976. I have also held WA6CLR and VE6CGS. About 80% of my contacts are on CW. I enjoyed the challenge of low power for almost 62 years and until January 2017 never owned an amplifier. With 100 watts I confirmed all entities except P5 on CW/SSB and 3Y0 on SSB. I took part WRTC 2014 as a referee. I'm honored to be a member of the CW Operators (#157) and First Class CW Operators (#1941) Clubs. I've also been an ARRL member for over 50 years. I'm also a member of the Central Texas DX and Contest Club.



Name: Marvin G Bloomquist
Age: 77
Calls used: R3/N5AW

Callsign: K5WA
Team Mate

First licensed in 1965 as WA5NGH at age 13. Got into contesting in the early 80s as N5DU. Obtained K5WA in the 90s. Enjoyed several M/S efforts at ZF1A with K6AM as lead. Have had the pleasure to operate from HZ1AB, R3/K5WA, V47JA, KP5, VP2M, V31, HL, VY2, 4U1ITU, G3FXB, XE2FU, KP2 and more. Bob W5SJS, let me augment his antenna farm with several new towers and multiple antennas. Bob allows me to treat the station almost as my own and I greatly appreciate his support over the years. I also was greatly supported by Richard K5NA and Susan K5DU during the qualification.



Name: Bob Evans
Age: 65
Calls used: R3/K5WA, VY2/K5WA, ZF2EV, V47EV


USA
NA #5
Callsign: K3PA
Team Leader

I am current president of the Kansas City Contest Club and a member of the Frankford Radio Club. I am a ham since 1972, avid Pennsylvania con-tester and DXer in the 70s and 80s, and active in Kansas since 2003. I operate all major modes, but my first love is CW! I especially enjoy DX contests, and the 160 meter contests. I am the developer of the original packet enabled DX logging (DOS) software "DXLOG" in the 1980s.



Name: Drew W Vonada-Smith
Age: 60

Callsign: N3AD
Team Mate

I am a member and officer of Frankford Radio Club and a long time competitor in major contests. I have operated at many large MM operations like N3RS (W3WJD), K2UA, W3GM, etc. and I was the 20 meter op at VP9AD for many years. For a few years we did a small MM at my home station N3AD. In recent years I have operated single op as V26M, VP2MMM, VP9/N3AD. I have operated SO at my home station for many years as N3AD and in recent years in WPX CW from home as KT3M call borrowed from my son Rob. I took part in WRTC 2000 as a competitor 2000 and was referee in Finland 2002 and Brazil in 2006.



Name: Alan Donziger
Age: 75
Calls used: V26M, VP2MMM, VP9/N3AD


USA
NA #6/1
Callsign: N9RV
Team Leader

I've been a ham since 1967, got my novice license in Michigan as WN8YVR at age 12, now N9RV since 1996. I became a CW operator by getting active in traffic nets, bumped into a contest once while waiting for a traffic sked! Favorite contest is the CQ WW CW, favorite category is SOAB. I have owned multi-tower contest stations in Ohio, Indiana and now Montana since 2007. Also enjoy M/M operations, have been part of the K3LR team since the early 1990's. I was a teammate of K3LR at WRTC 1996, 2002 and 2006. I am President of the Big Sky Contesters. I also serve as editor of NCJ.



Name: Patrick Barkey
Age: 63

Callsign: N6TR
Team Mate

I started listening to SW when 10 years old and first licensed just after my 13th birthday (WN6ZVC), received my General in 1968 and was active in CW traffic nets and contests. During the 1980's I started developing software for contest applications. This started with a duping program and then a totally anonymous CW operator used in the 1996 ARRL Field Day. Today I do log checking for about 20 different contests. I participated in WRTC 1996 as a competitor and a couple of others on the log checking team. I was also on the board of directors for WRTC 2014.



Name: Larry Tyree
Age: 63
Calls used: K7RAT


USA
NA #6/2
Callsign: K6XX
Team Leader

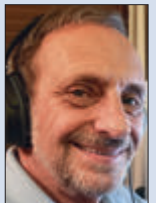
First licensed at age 12 as WN6HPF. Later call signs were WA6HPF and N6IP. Changed to K6XX in 1996. Have also operated /KH6, /6Y5, S5/, R3/, R31A, and as 7J1AGQ/2. Often says a life ends at 30MHz, yet is active from 1.8MHz to 1.2GHz. Most activity is on CW, but a microphone is available and is occasionally even used. The K6XX station moved to its present location in 2000. The station uses more than 40 antennas spread out over approximately 70 acres of land. I served on the committee for WRTC 1996. Was team leader at WRTC 2010. Attended WRTC 2000 and WRTC 2014 as an observer.



Name: Robert P. (Bob) Wolbert
Age: 56
Calls used: NF6A

Callsign: WA6O
Team Mate

Originally from Moscow, Russia, for the past 28 years I have been living in the US. I was first licensed as UA3AIW, I have been WA6O since 1999. I am a member of NCCC, 40m captain in N6RO contest team, CWops #42. I participated in many CW contests from DX locations – with "Team Vertical" from Jamaica, Fiji, Bahamas as 6Y2A, 6Y8A, 6Y9A, 3D2XA, 3D2OK, C6AAW. I operated from HC8N, Galapagos, and TF4X, Iceland. In 2003 I won the CQWW CW. I hold the World Record for SOLP 15m for 9 years now. DXpeditions: CE0Y/WA6O, FO0SHA, ZK1WAL, TX5K Clipperton 2013, VK9MT Mellish Reef 2014, and TX3X 2016.



Name: Mike Shapiro
Age: 68

 **USA**

NA #6/3

Call sign: K2PO

Team Leader

My father and I visited a Boy Scout fundraising auction in 1970, when I was 11, and we went home with a National NC-183B receiver (which weighed nearly as much as I did). He recalled some Morse code from his Navy days, and we were both licensed the next year – he as WN2APR and me as WN2APO. I paused my ham radio activity from 1984 – 2008, focusing attention on family and work. I'm active in the Willamette Valley DX Club and the Oregon Tualatin Valley Amateur Radio Club. It's a great privilege to get to compete with many legends in the hobby at WRTC 2018.



Name: William (Bill) Y Conwell
Age: 59
Calls used: YJ0PO

Call sign: KU1CW

Team Mate

Alex has started on HF as SWL UC2-009-562, at the Minsk Polytechnic Academy Club station. At about 14-15 years of age learned CW. He received first call sign UC2AHZ at the age of 16. Alex has about a dozen of all-time W0 contest records and continues being seriously involved in contesting from US and abroad. Has multiple Top Ten US and World finishes in WWCW/WPX and others. In 2016 took first place in WWCW as P40C (SOAB). Later calls included: RC2CW, EU1CW, AA2OX, P40C, V31CW, JP3JFK, 4U1ITU, KH6... , LA, PA, XV, YB, PJ2/KU1CW and few others.



Name: Alex Tkatch
Age: 53
Calls used: P40C, V31CW, JP3JFK

 **Canada**

 **USA** **NA #7**

Call sign: VY2ZM

Team Leader

Born in Coastal New England (Mass), always summered by the ocean, learned early on that salt water is MAGICAL for DX and low band contesting. I am married with Miriam in 1982. After retiring in 1994 I formed K1ZM Communications Inc. In 2001 I moved to Prince Edward Island Canada. In 2007 I became permanent resident of Canada. I enjoy 160-m-DXing and published the book "DXing on the Edge... the Thrill of 160 m". I was a competitor of WRTC 2000, 2002, 2006, 2010 and 2014.



Name: Jeffrey (Jeff) T. Briggs
Age: 71
Calls used: K1ZM

Call sign: KK6ZM

Team Mate

My original call sign was KJ6CWP. I attained the vanity call sign of K6AAX soon after and operated several contests from VY2ZM and as VP2MXA from Montserrat Island. In late 2012 I changed my call sign to KK6ZM in honor of my father, K1ZM and my uncle, K3ZM. The contest within a low band contest is to work all three of us or "Work ALL ZMs". I assure you that I am the most challenging to work. That should make me the most fun, right? My current interests are contesting, particularly SSB, and working low band DX on 75m and 160m.



Name: Patrick W. Briggs
Age: 46
Calls used: K6AAX, VP2MXA

 **Canada**

NA #8

Call sign: VE7CC

Team Leader

I was first licensed as VE7BDJ in 1962 at age 16. I attained 5BDXCC #134 in 1972. In 1974 I changed my call to VE7CC. Participated in the WRTC representing Canada in WRTC 1990, 1996, 2010 and 2014. In 2001 I was part of the YK9A DXpedition. I mainly operate HF contests and chase DX, especially on 80 meters. As well as contesting from home, I have had the pleasure of contesting from VE6JY (2000), VE3EJ (many times), as well as a member of multi op teams from both VE7SZ and VE7SV. I received Yasme Award for Excellence in 2014 for writing DX Cluster software.



Name: Lee Sawkins
Age: 73

Call sign: VE7SV

Team Mate

I was first licensed in 1959 as VE7BFN. In 1963 I went to the Canadian Arctic to work on a weather station and became VE8AA and then VE8RR. When I returned to BC I was issued VE7SV. I have been continuously active since then, often from the far corners of the globe. I operate 95% CW but do occasionally get on SSB and RTTY especially during the major DX contests. I have attended all WRTC events to date either as an operator or a referee. I enjoy antenna building and still maintain my hilltop contest station in British Columbia where there are 5 towers and many many antennas.



Name: Dale Green
Age: 73
Calls used: CE2AWW

 **USA**

 **CAN** **NA #9**

Call sign: K9VV

Team Leader

Amateur radio has been a life-long hobby (40+ years) which led me to a professional communications career, while at the same time providing an enjoyable outlet. My sincerest thanks to those great hams who have mentored and taught me. I strive to return the same passion in helping others learn to enjoy our wonderful hobby. At the end of the day, it is people that are the fabric of the amateur fraternity. My interest in lingual skills is also greatly enhanced by ham radio. I enjoy contesting, DXing, DXpeditioning and using my hobby to help others.



Name: Fred Kleber
Age: 58
Calls used: NP2X

Call sign: VE3EJ

Team Mate

I was first licensed in 1972 as VE3AKG. I am an active contester and DX'er for 46 years. As DXpeditioner I held 8P9EJ (1998), VP8DEJ (2002) and VP2EEJ (2004). I was member of DXpedition teams like VP8THU, VP8GEO, FT5XO (Kerguelin, 2005) and VP8ORK. I was Canadian team leader at WRTC 1996 (4th place as K6P), WRTC 2000 (11th place as S581I), WRTC 2002 (6th place as OJ5A), WRTC 2006 (First place as PT5M) and WRTC 2010 (22nd place as R34C), WRTC 2014 (5th place as K1M). WRTC partner VE7ZO (VE3IY) on first 5 occasions, K9VV (NP2X) in 2014.



Name: John Sluymer
Age: 63
Calls used: VE6OU


Hawaii

USA OC #1

Callsign: N2NL

Team Leader

I gained my interest in amateur radio through Scouting, and thanks to my Elmer AA2F. I was licensed as KB2BNS at age 15. Introduced to contesting by neighbor W2REH, I was invited to join the N2RM M/M team in the early 1990's. Along with team mate N6MJ, we finished 4th at WRTC 2002 in Finland and were the runners-up at WRTC 2006 in Brazil. Most recently, Tom W2SC and I competed in Boston in 2014, finishing 12th. I am indebted to Alex, KH6YY and Kimo, KH7U whom without their assistance I would not have been able to compete for the Team Leader position. Mahalo!

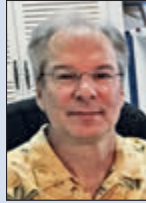


*Name: Dave Mueller
Age: 47
Calls used: NH2T, WH7AA*

Callsign: W2SC

Team Mate

I was first licensed in 1974 while I was in High School. My dad was a ham and got me interested in the hobby and we shared many positive radio experiences together. Contesting was at best a casual activity for many years until the early 90's when I finally had enough room to build a top 10 class station. I was fortunate enough to meet Randy, K5ZD who gave me the opportunity to operate from his fine station and I won my first contests. I tried operating from the Caribbean in 1996. I eventually took over the famed 8P9Z station in 2001 and have operated there since.



*Name: Tom Georgens
Age: 58
Calls used: 8P5A, 8P1A, 8P7A*


New Zealand
OC #2

Callsign: ZL3IO

Team Leader

I got first licensed in 1982 as Y31IO, later Y58IO, DL7VTM and finally DL7IO. My main radio interests were always contesting and DXing. I've operated from over 30 DXCC's. In 2009 we moved to New Zealand. Here we enjoy a different lifestyle and try to develop a competitive contest station (ZM4T). My partner in life is Birgit – ZL2YL and we have two lovely daughters Saskia (22) ZL2GQ and Xenia (17) ZL4YL. Being able to participate in the WRTC 2018 will be the highlight of my amateur radio career and I'm very excited to meet the best contesters and many of my old friends in DL.

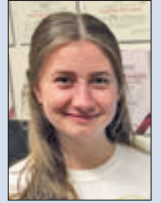


*Name: Holger Hannemann
Age: 54
Calls used: DL7IO, ZL2IO, ZM4T*

Callsign: ZL4YL

Team Mate

I am a high school student and will be 17 years old at the time of the WRTC 2018. I was first licensed in 2015 with the call sign ZL4YL, although I started learning CW when I was 10 years old. I grew up in a radio amateur family as both my parents, Holger – ZL3IO, Birgit – ZL2YL, and my sister, Saskia – ZL2GQ are all radio amateurs. My favorite thing about ham radio is contesting – mostly in CW. I am very much looking forward to participating in the WRTC and meeting the best contesters and organizers of our radio community.



*Name: Xenia Berger
Age: 17*


Brazil
SA #1

Callsign: PY1NX

Team Leader

At age 7 my father (PY1SL) taught me CW. With the age of 10 I received my first call sign PU1KDR. With the help of my best friend Alex, PY1KS, I've started to enter some DX and national contests. In 1998 I took part in my first CQ WPX CW and got second on SOSB 10 LP. At age 13 I changed my call sign to PY1NX. I had the opportunity to operate some great contest stations in Brazil like ZW5B, ZX5J, PS2T, and PW7T. I've been present in WRTC 2006 and 2014 as competitor. Amateur radio has brought me great moments, friendships, great results in contesting, and I hope it lasts for years and years.

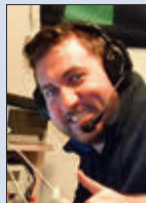


*Name: Soni Endlich Leite
Age: 32*

Callsign: PY2SEX

Team Mate

I started on HAM Radio in 1996 after some years on citizen band. I immediately started to operate contest as at the beginning it was a way to make new DXCC countries. But at the same time I started to see in a different way as a real competition. I've worked hard for the classification for WRTC 2014 but unfortunately I had to stop to count points as I moved to Germany in the end of 2011 for work. I've also candidate myself to be referee but again a new job in Bayern in May 2014 made me to drop the invitation. I love HAM Radio as well as beer, taste and brew.



*Name: Alexandre Correia
Age: 43
Calls used: PY1KS, DLINX, CT7ANB*


Argentina

ROU SA #2

Callsign: LU1FAM

Team Leader

I became a ham in August 1997. The first contest I did was at LU4FM in October 1997 (Multi-Multi). Since then I've never missed a CQ WW SSB! Since 2006 I started operating in the SOAB category (SO2R) where I obtained several LU records (SSB and CW) and also won the CQ WPX Triathlon in 2012. Currently I help at LU5FB to train new hams. I have participated in a few IOTA DXpeditions as 3G7C and LU6W (Isla Escondida) and operated contests from CE3, CX, PY, PJ4, and OH. I have participated in two WRTCs (Finland and Brazil).

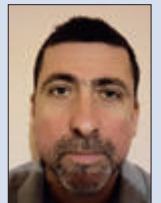


*Name: Lucas Maiorov
Age: 36
Calls used: –*

Callsign: YO9WF

Team Mate

I got my first license in 1986 with call sign YO9FJW, then in 2000 I changed my call sign to YO9WF. I am active in all big contests, especially in mixed mode and SO2R. Also I am member of Romanian HST (High Speed Telegraphy) team. As a member of the ED8X team I operated CQWW CW the last three years earning big scores and top places.



*Name: Ionut Pitigoi
Age: 45
Calls used: YP9W*



USA

Defending Champion

Callsign: **N6MJ**

Team Leader

Daniel was first licensed as a Novice in 1989 at the age of 8. He shared his home station with his dad, W6TMD, and his brother, KK6BB. Both his father and brother were avid contesters, so he caught the bug very early. His first taste of big time contesting came in '95 when N6AW invited him to operate at the W6BA M/M. He has had the fortune of being able to operate from some of the biggest multi op stations around the country including K3LR, KC1XX, NK7U, W7RM and W6YI. He has participated in the last 4 WRTC's, winning the gold medal in Boston 2014 with KL9A.



Callsign: **KL9A**

Team Mate

Licensed in 1993 at age 10 as WL7KY. Elmered by my father, KL7FH, and grandfather, KE7MP. There is nothing better than high level competitive contesting, and I have been fortunate enough to operate at some amazing stations with some of the best operators. I took part in WRTC 2006 in Brazil, WRTC 2010 in Moscow and WRTC 2014 in Boston. In 2014 I won the gold medal with my team mate Daniel N6MJ. He is my team mate in 2018 again. I'm looking forward to the intensity that will be WRTC 2018!



Name: **Daniel Craig**
Age: 38
Calls used: ZF2MJ

Name: **Christopher Hurlbut**
Age: 35
Calls used: -



Chile



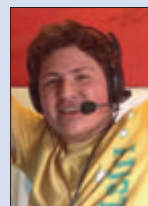
USA

YT #1

Callsign: **CE2LR**

Team Leader

I started amateur radio at the age of 14, first ham in my family. Then I was addicted to contests in CW and SSB. I am also interested in DXing. I participated in competitions about 4 years ago. I participate with the CE3CT or SO team where I learnt a lot. Sometimes I operate also from my small station that is built during these 7 years of amateur radio.



Callsign: **KG5HVO**

Team Mate

Bryant, age 14, became a ham in 2015 and upgraded to Extra in 2017. He enjoys contesting, DXing, CW, and antenna building and was a team member on the 2017 Dave Kalter Youth DX Adventure to Costa Rica. He is a member of the Jefferson Amateur Radio Club, the Montgomery Amateur Radio Club, as well as CWops, and the Georgia Contesting Group. As a Boy Scout, Bryant was introduced to amateur radio at a Boy Scout Merit Badge course.



Name: **Mathias Acevedo Von Frey**
Age: 23

Name: **Bryant Rascoll**
Age: 14



Romania



UKR

YT #2

Callsign: **YO8TTT**

Team Leader

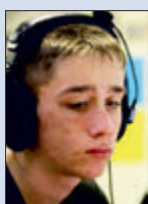
At age of 10 in 2003, my father YO8DOH took me to the Children's Palace where I learned Morse Code. I got the license in 2006 and after I did the first QSO in 2007, I liked contests immediately. Since 2007, YO8SS has become my coach at HST (High Speed Telegraphy). From 2009 I am a member of the Romanian HST Team and I was European and World Champion several times at Morse Runner and RuzfXP, also won many medals at Receiving Tests and Transmitting Tests. I like also DXing, expeditions and collecting new countries. I studied electronics in my hometown, University Suceava.



Callsign: **UT5GW**

Team Mate

I was born in south part of Ukraine, in the city of Kherson and I still live there. I did first QSO at club school station in 2008, and in 2009 I got the license with call sign US1GCU. In April 2018 I got a new call sign UT5GW. Also I am member of UT2G contest team. I am student in 4th year in University of Tourism.



Name: **Alexandru Mancas**
Age: 24

Name: **Leonid Kharchenko**
Age: 21
Calls used: US1GCU



Hungary



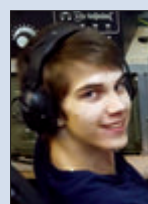
GER

YT #3

Callsign: **HA8RT**

Team Leader

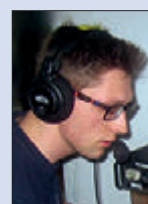
I am a radio operator since 2012. I learned CW in and started contesting in 2014, including HST competitions. In 2014 I won 1st place in the HST championship in Budapest and in the 8th IARU R1 HST Championship the 2nd place at MorseRunner. In 2015 during the 12th HST World Championship I was on the 3rd place at transmitting and Morse Runner each. I am a member of YOTA since 2015, joining many activities e.g. from 9A1A. Here I met my team mate DK6SP and many other friends. I love mixed mode contesting, have done multi-op contests many times.



Callsign: **DK6SP**

Team Mate

I got into Hamradio in late 2008 through local hams. I made my first license, DO6PS, in 2011 and got very interested in contests through Bavarian Contest Club. So I decided to upgrade to class A license, DK6SP, in 2013 to have access to all the bands. I am very interested in CW operations as well as SSB. Our local club Erding - C25 is very active in the German club championship winning this event five times. Another passion is YOTA (Youngster On The Air) where we young hams come together to save our great hobby.



Name: **Tamas Bence Varro**
Age: 19
Calls used: HA9T

Name: **Philipp Springer**
Age: 20
Calls used: DQ5M

 **Croatia**

WC #1

Callsign: 9A7DX

Team Leader

I became interested in HAM RADIO when I was 12 years old. My physics professor gave me a choice to either go to HAM radio classes or do some physics stuff. I chose Ham Radio class. I got stuck in a weird world of ham radio. I got the first license when I was 13 as 9A5AGL. From that point I started to work on bands and maybe a year later I went to contests on HF & VHF. Before going to college I did a medium advanced contesting from 9A5Y & 9A4D station. Then during college I saw some modern stuff at 9A1P station. Back to my hometown and together with my old friends I tried to improve our 9A5Y site.



*Name: Vedran Carapovic
Age: 33
Calls used: 9A5AGL*

Callsign: 9A3LG

Team Mate

I fell in love with HAM-RADIO in elementary school, in 1976, where I attended the course and passed the exam for the initial class operator. Since then, HAM is my biggest hobby. I especially liked contesting, telegraphy, construction, and antenna design for HF and VHF. I finally got 9A3LG. I've always been a team work guy as a part of 9A5Y (9A1CCY). For more than 30 years I am president of Radio Club "Jan Hus" Daruvar, 9A1CCY/9A5Y. Together with all the members from our club, we are trying to keep up with the latest technical achievements in HAMRADIO hobby.



*Name: Zvonimir Karnik
Age: 54*

 **Kazakhstan**

WC #2

Callsign: UN9LW

Team Leader

I started to learn Morse code at the age of 13 at school. At age 14 I earned my SWL call sign UL7-026-207 and was one of the operators of the club youth station UK7LAF. I got my personal license at the age of 21 and call sign UL7LEN. By that time I had built my first transceiver, and using them on the air. From 1988 to 2000, I headed the radio club station UL8LWA/UN8LW. Since 1993 I hold call sign UN9LW. Since 1998 I use the contest call UPOL. In 2004, I built a countryside home station where I still participate in contests. I participated in WRTC 2002 and WRTC 2010 in Moscow.



*Name: Vladimir Vinichenko
Age: 58
Calls used: UPOL*

Callsign: UN7LZ

Team Mate

My first steps in radio began in 1973 at the youth club radio station UK7LAF. First I got my SWL call sign UL7-026-199, and after graduating from high school in 1981 I received my first call sign UL7LER, but until 1993 all activity was from club stations UL8LWA, UL8LYA (now UP2L). In 1993, I got my current call sign UN7LZ and my special call sign for the contesting – UP4L. Participant of the expeditions for contesting: UP5AA (1st WAEDC 2011), 6V7V (3rd CQWW CW 2012) and 6Y7W (6th CQWW CW 2013). I participated in WRTC 2010 in Moscow as R380.



*Name: Valeriy Zhilyayev
Age: 57
Calls used: UP4L*

 **New Zealand**

 **FRA** **WC #3**

Callsign: ZL3CW

Team Leader

Jacky was first licensed in 1979 as J28CE, then back home to France in the middle of 1980 where he received F6GXB and later F2CW. Working 19 years for the French Air Force (including 7 as diplomatic staff), 10 for the International Committee of the Red Cross (ICRC), his positions were all related to telecommunications. Most of his professional postings were overseas. He participated in many expeditions, e.g. to Bouvet Island, Clipperton Island (twice), Pitcairn Island and Kermadec Island (7 times). He was a competitor during WRTC 1990 and referee 2010 and 2014.



*Name: Jacky Calvo – Age: 65
Calls used: ZM1A, F2CW, ZM8CW, TX5CW, VP6CW, FO0CW, TX8CW, ZL9HR, N8A*

Callsign: F6BEE

Team Mate

Jacques is licensed as F6BEE since 1970. He operates also TM2Y in major contests and was active with WH7V, 6W1RW, ex 8Q7TV, ex CN2JS. He calls himself a hard-core contesting and DXer. He earned a dozen plaques in major DX contests. Though having visited many DXCC entities in 29 CQ zones and operating a lot of major SSB and CW contests from 5 continents, Jacques leadership for Dxpediton just started in 2010 with the successful TX4T from Tahiti. Jaques prefers CW but also operates SSB and some RTTY. He is an active member of CQWW DX and CQWPX contest committees for 10+ years.



*Name: Jacques Saget – Age: 64
Calls used: TM2Y, WH7V, CN2JS, FY5KE, 6W1RW, VP6T (TL), TX4T(TL), FH/F6BEE,*

 **USA**

WC #4

Callsign: K1DG

Team Leader

Doug Grant, K1DG, discovered ham radio at age 13 and began contesting soon after that. He has operated in all entry categories from single-op to Multi-multi, has won many, and holds several records. He is a member of ARRL, FOC, CWOps, A-1 Operators Club, YCCC, and the Radio Club of America. He is a member of the CQ Contest Hall of Fame. He was the editor of the CQ Amateur Radio Almanac, and has organized the Dayton Hamvention Contest Forum for over 20 years, and is on the boards of Contest University and the WWROF. He won WRTC 1990 and was the President of WRTC 2014 organization committee.



*Name: Norman Douglas (Doug) Grant
Age: 64*

Callsign: N2NT

Team Mate

I have been licensed since 1972 and have been an active contesting since my novice days. I have a competitive station in NJ, but do most of my contesting from K3LR as one of the 20M operators. I also maintain a station in St. Kitts, V47NT (V47T) for CQWW. Over the years, I have operated from many different winning contest stations, including NP4A, VY2ZM, VP2E, V26B, W2PV, W2YV, and many others. I am a member of the Frankford Radio Club and FOC. CW is my first love. I was a competitor at WRTC 1996, 2000, 2002, 2006, 2010 and a member of the board of directors in WRTC 2014.



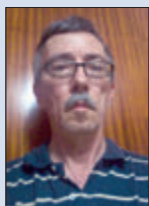
*Name: Andy Blank
Age: 61
Calls used: V47NT, V47T, VY2NT, VP2ENT*

 **Venezuela**  **RUS** **WC #5**

Callsign: YV1DIG

Team Leader

Became SWL at age of 8, I was first licensed at 10. I was a member of 4M1A in the 60's & 70's. As a part of PJ2T, YV4A and YW4M I operated contests since then as multi-op. I am winner of ARRL, CQWW, CQWPX and other as SOSB. As a DXer I hold Honour Roll and a 10 Band DXCC, 9 Band WAS and 8 Band WAZ. IOTA activities including YV0 is another passion. I am the former president of the Radio Club Venezolanom, a A-1 ARRL OP member. During WRTC 2010 in Russia I operated as team leader.



Name: Paolo Stradiotto

Age: 58

Calls used: YW1D, YW4D, YV1TO

Callsign: RA9USU

Team Mate

Ham radio since 1983 (UK9UCG, later UA9UWM), then got my first license RA9USU in 1989. Usually operate from contest locations across the globe. Some of them are built from scratch before the contest, some of them are more like a life-time project for their owners. I like to do both. I'm crazy about operation from DX-locations and I'm glad that I've been involved in few major DXpeditions. Crazy HAM, crazy contester, crazy DX-peditioner. Now I work in communication business, which is very logical and much enjoyable (especially if you are in radio since 7 years old). Visited 109 countries so far.



Name: Dmitry Zhikharev – Age: 44

Calls used: 3V6T, 3V8BB, 3V8SS, 4O3A, 4U1UN, 4U1WB, 4U60UN, 4U70UN, 4U1VIC, 5A1A, 5A5A,

 **Canada**  **GER** **WC #6**

Callsign: VA2EW

Team Leader

I've got my first call sign F6FFM at 17 and discovered contesting at engineering school where Jacques F6BEE and his friends used to activate the F3TV school call sign. In 2004 I moved to Canada as VE2TZT and later VA2EW. I am very involved in DXing was a part of TX4T and VP6T as well as in contesting, organizing many multi-ops at my home station when it is now my turn to transmit the contest virus to newbies. I am now the president of the WIARC (West Island Amateur Radio Club). During the IARU HF 2013 I operated in Boston one of the WRTC 2014 test stations as a team with Victor VA2W.



Name: Gilles Renucci

Age: 58

Calls used: VE2TZT, VC2T, F6FFM

Callsign: DL1CW

Team Mate

Born in 1957, I started HAM radio in 1979, right after my public service, where I had learned Morse code already. My elmer was Tina – DL5YL. Since 2004 I have been a member of the German National Team for High Speed Telegraphy and attended ten World or IARU Region 1 HST Championships as a competitor. Over the years I was on the air from almost all continents (except Oceania). Most of the time doing that in holiday style, but also have been member of bigger team expeditions. Contesting is another focus to me. I am happy that I became a long time member within the CR3L/CR3W Team in major CW contests too.



Name: Arno Polinsky – Age: 61

Calls used: 9G5ZZ, 5H3AP, J79ZZ, V31PA, 9H3AP, OK8EAO

 **USA** **ST #1**

Callsign: N6XI

Team Leader

Rick was first licensed in 1961 as KN3QDD, then K3QDD. His first love in radio was CW traffic handling in the 60's, followed quickly by contesting. He joined PVRC and operated a lot of CD Parties and CW SS. Contesting highlights include 1983 CQ WW CW N6XI/4X SOAB (7th World, 1st Asia) and several 1st and 2nd places as multi-op at ZF2NT, 6Y2A, HC8N or P40L. He is the past president of the NCCC. Rick took part in WRTC 2010 in Moscow as teammate to K6XX.



Name: Richard (Rick) M Tavan

Age: 69

Calls used: WF6C

Callsign: AE6Y

Team Mate

I was first licensed in New York at age 12 and got AE6Y in 1978. I became seriously interested in contesting when I decided in 1992 to write my own logging software. My first ever contest from a DX location was in CQ WPX SSB in 2002 as ZF2AF from ZF2NT's station. Then I first visited P49V's cottage and did WPX CW as P40Y. The joys of contesting from the DX hooked me. W6LD and I purchased the P49V station in 2003, and since then I've mostly done single-ops as P49Y. I'm pretty much a self-taught contester. From time to time absorbing crumbs of wisdom from masters like my Aruba neighbor W2GD.



Name: Andy Faber

Age: 72

Calls used: P49Y

 **USA** **ST #2**

Callsign: W2GD

Team Leader

The ARRL Field Day was my first contest over 59 years ago. I was instantly hooked on radiosport. Earning my first license soon followed and both ham radio and contesting have played a major role in my life experience ever since. Winning the ARRL SS CW from my home station in 1978 remains one of my cherished accomplishments. Latter achieving world high scores and setting records in CQWW, ARRL DX, WPX and CQ160 on both PH and CW have been gratifying. DX-peditions and operating contests from outside of the USA remain my primary operating interest. I am a member of the Frankford Radio Club.



Name: John Crowelli – Age: 69

Calls used: P40W, P44W, P40HQ, VP2MGD, K5D, K1N, OHOMB/OJO, PJ1B, A61AJ

Callsign: AA3B

Team Mate

Bud has made over 1.2 million QSOs since first being licensed in 1970. He has a passion for contesting and will be a WRTC competitor for the first time in 2018. He is a member of the Frankford Radio Club, First Class CW Operators Club, CW Ops, Activity Group CW DL, CWJF and ARRL. Bud pilots a well-designed contest station in Boyertown (PA), finished sixth in the very competitive qualification region NA#1, and holds the CQWW CW SOLP world record set while operating as V26K. AA3B is active in every contest.



Name: Joseph (Bud) W Trench

Age: 61

Calls used: V26K


USA

GER ST #3

Callsign: *K3LR*

Team Leader

I have been an amateur radio operator for 46 years. Since 1992 I have hosted many operators as part of the K3LR Multi-Multi DX contests efforts. The K3LR station holds current USA records in 3 major DX contests. I am Vice President of the North Coast Contesters, President of the Mercer County Amateur Radio Club (W3LIF) and President of the Radio Club of America. I serve as chairman of Contest University (12 years). I was elected to the CQ Contesting Hall of Fame in 2006 and was honored as Ham of the Year in 2015 by the Dayton Amateur Radio Association – Hamvention. I am the CEO at DX Engineering.



Name: *Timothy (Tim) J Duffy*
Age: 58

Callsign: *DL1QQ*

Team Mate

I was first licensed at age 15. My history teacher at high school (DK2JX) got me interested into this great hobby. From the beginning I fell in love with contesting. I like SSB and CW. As a senior in high school I was a foreign exchange student in Minneapolis, where I got my US Extra Class license N0QQ. I am the head of the local radio club VFDB Z78. I have operated Multi-op from many contest stations like K3LR, DR1A, DL0CS, T70A, 4U1VIC, S59ABC, KC1XX, W0AIH, OZ5E, ED6A, 9Y4W etc. My contesting highlight so far was the participation as a competitor at WRTC 2014 in Boston.



Name: *Alexandra (Sandy) Raker* – Age: 42
Calls used: *N0QQ, DH8YAV, DR8A*


BIH

MNE ST #4

Callsign: *E73A*

Team Leader

Since 1990, during the assignments with UN peacekeeping operations, I've been active from the various parts of the world. I've tried to be QRV in all major HF DX contests. The results have been alike, from an ordinary check log to the world record scores, some of which lasted over half a decade. The peak activity was between 1997 and 2002 from Cyprus (C4A), where I built a fully automated SO2R station. My contest activity, with 17 world-winning scores, 8 world records and over 60 top-box finishes, has resulted with the 1996, 2000 and 2002 wild-card invitations as a WRTC competitor.



Name: *Ivo Pezer*
Age: 57
Calls used: *9A3A*

Callsign: *4O3A*

Team Mate

I have dedicated nearly 40 years to ham radio. Developing the big contest station 4O3A on hill-top of peninsula in Boka Kotorska bay I earned many top scores and host many top operators. I am founder of SKY SAT communications company, which start to produce sophisticated ham products for big contest stations, esp. triplexers, high-power-filters and amplifiers. I was a competitor at WRTC 2006 in Brazil, WRTC 2010 in Moscow and WRTC 2014 in Boston. Contesting is my love.



Name: *Ranko Boca*
Age: 57


Romania

SVN ST #5

Callsign: *YO8SCA*

Team Leader

I received my license and call sign in 1990. I was 16 years old and my call sign was YO8SCA. I found learning CW easy and soon that was my main operating mode. I hold an US Extra amateur radio license and have the vanity call sign KO8SCA. After education, starting business and family I forced contesting. For me the biggest challenge of all in amateur radio contesting is WRTC. Recently I was lucky to be a guest operator at some big gun stations, such as NR4M (The Goat Farm), or take part in the ARRL Field Day contests at N2SF and experience contesting at its best.



Name: *Adrian Ciuperca*
Age: 44
Calls used: *YO8SCA*

Callsign: *S55M*

Team Mate

My amateur radio activity started in 1981, when I received my first ham license. Later on, I joined 9A1P team and found out the thrills of HF contesting. With friends from all over the world, we did some great results e.g. 9A1P 1st place CQ WW EU, K1LZ,E7DX, JT5DX. When I meet Krassy, K1LZ we realized that we share common passion for amateur radio and we joined our forces and dedication. The result of this, is lot of fun and good results in HF contesting. At this time, I am member of LZ5R Milara contest club and we are trying to get most of possible from southeastern Europe location.



Name: *Adi Voh*
Age: 51
Calls used: *9A8WW, 6Y1M, JT5MM*

 **USA**

Callsign: **AA4NC**



I was first licensed in junior high school (1976) as WN4PSL. I upgraded to Extra and received AA4NC in 1977. I have been interested in contesting and DXing my entire ham career and prefer being on the DX end of the pileup. I've operated from all over the world using callsigns such as CY0XX, FS5PL or HC8N. I am a member of the Potomac Valley Radio Club (PVRC). I was a competitor at the 1990 WRTC in Seattle with partner W7EJ (now SK) and finished in the Top Ten. I have achieved Top World finishes in the ARRL DX Phone, ARRL DX CW, CQWW SSB and CQWW CW contests in single and multi operator categories.

Name: **Will Roberts** – Age: 58 – Calls used: T8NC, CY0XX, 4V2C, HR2J, V47Z, 8P9JB, AA4NC/KP1, HP1/AA4NC, PJ5/AA4NC

 **Germany**

Callsign: **DL7FER**



I was first licensed in 1993 at the age of 14 and became DL7FER in 1999 having finally mastered the code. It all had started with DXing on CB/11m but soon contesting on HF became my sole focus. Throughout the years being a ham opened many doors and I had the opportunity to operate from more than two dozen places around the globe. In Germany I operate from DL0UM which is a small hilltop station that I maintain with a group of friends. Also, for major contests I regularly join the crowd at DF0HQ in Ilmenau. Since Finland 2002 I have followed the WRTCs with a mix of awe and amazement.

Name: **Felix Kuntzsch** – Age: 39

 **Chile**

Callsign: **CE3CT**

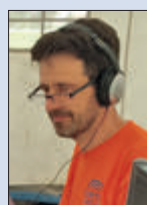


Over 30 years of experience in contests, I started in 1987 as CE4PBB, then as CE4CT and now as CE3CT. Since my beginnings I have been interested in contesting. My elmer was CE4GTC. I am part of the board of directors of INDEXA and a member of the DXXE and LUCG. I am very excited to be a part of the WRTC as a referee for the first time, I am sure it will be a great experience to have the opportunity to share a radio with world class operators. See you in July in Germany.

Name: **Roberto Ramirez** – Age: 48

 **Germany**

Callsign: **DM5EE**



I taught myself morse code and got my license as DL2HBX in 1983 at the age of 18. Strongly inclined towards CW, I have operated in almost every CQWW DX CW since 1983 and in many other contests. Single OP (typically LP and QRP) and Multi-OP operations from LX7A, 3V8BB, CN8WW, K3LR, K8CC, DR1A, VP2MDX and several other places with #1 finishes on a national, continental or world-wide level. Held the SOAB LP world record in CQWW DX CW back in 1996 (3V8BB). Lived in Michigan between 2003 and 2009 (KK8I) and had a great time, meeting many contesting legends on the air and personally at Dayton.

Name: **Ulrich Ann** – Age: 53 – Calls used: KK8I, DL2HBX

 **Germany**

Callsign: **DK3GI**



My first Contest was the Worked All Europe 1967 when I was SWLing. I received the call DK3GI at the age of 18 and after 50 years on the air I'm still focused on CW and HF Contests. In those early days I learned a lot by watching K9TZH operating DL5JF in the ARRL Contest. In 1993 I operated SO2R for the first time in the German Xmas Contest which is a Sprint and runs over 3 hours. I still see the WAE with its QTC traffic as the most demanding contest for station equipment and operator skills. The highlights however were to be competitor in the WRTC in San Francisco 1996 and Helsinki in 2002.

Name: **Roland Mensch** – Age: 68
Calls used: HK1NBK, ZS1CT, JY8WA, DX1S, ...

 **Germany**

Callsign: **DL9EE**



Holger got his callsign DL9EE in 2000. He is an active contester and DXer. As leader of his local radio club Preetz he played a central role in winning the German club championship in 2012 with a very small team. He took part in many contest with numerous top places as a single op in WAE, CQ WW or CQ WPX. He is also active in multi operator teams e.g. DR1A, DF0HQ oder DK0PC/p in field day. He regularly visits Madeira as a member of the CR3W crew. Holger is also an active operator of DA0HQ, the German headquarters team. He worked in DARC committee for DX and contesting for several years. His favorite mode is CW.

Name: **Holger Wilhelm** – Age: 49
Calls used: DR5X, CR3L

 **Germany**

Callsign: **DL2OBF**

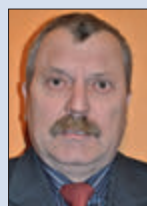


I was first licensed in 1986 and upgraded to DL2OBF one year later at the age of 15. From the beginning my main interests on the air were DXing and Contesting on the HF-Bands. Since the 90s I had the chance to join DF0HQ and operate many CQ WW Contests there. This was accompanied by contest expeditions to 4U1VIC, 4U1ITU, 3V, CT3, D4, GD, GU and a few more. Also in the 90s I started High Speed Telegraphy. I had the chance to represent Germany at many HST championships and I organized the IARU World Championship in HST in the town of Bielefeld. I was a referee at WRTC 2006, WRTC 2010 and WRTC 2014.

Name: **Heinrich Langkopf** – Age: 46
Calls used: GD6UO, MU/DL2OBF

 **Estonia**

Callsign: **ES5RY**



I was 13 when I got my SWL-license, but in 1979 I got my first real callsign UR2RME. Started to pay more serious interest in contesting in the second half of the 1980s. My first SO participation in CQWW was back in 1987. Since then I have participated in numerous amateur radio contests, both, as SO and as a team member in MO activities. I have contributed to the creation and development of ES5Q/ES6Q and ES5TV/ES9C contest-stations. I am a member of the Tartu Contest Team. During recent years I have often been in the successful team of ES9C. I was referee in WRTC 2014.

Name: **Toomas Soomets** – Age: 58

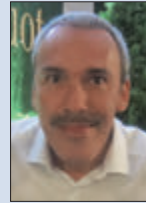

Great Britain

 Callsign: **G0CKV**


I listened to the first Sputnik on a homebuilt receiver in 1957. During the fabulous sunspot maxima in 1957/58 I experienced contesting and got interested in the science of ionospheric propagation. I was licensed January 1960 as SM6CKV and occasionally contested in the 1960s as SM6CKV, SK6AB and more. Essentially off-the-air for 35 years, I continued to build pretty good radios at work. Since retirement I got back into the hobby from suburban London as G0CKV and M5E and from around the world with friends. The last few years I have spent some time in 3B9 and had good fun doing CQWW CW as 3B9HA.

Name: **Olof Lundberg** – Age: 74 – Calls used: M5E, SM5CKV, W6CKV, 3B9HA, 3B8HA, 3B8MU, ZD8M, J11SEU


Switzerland

 Callsign: **HB9DHG**


I was born in 1966, and I've been a Ham since 1985. I love to take part in HAM competitions and I have participated in several contests with my personal call HB9DHG as well as gaining experience outside my country. I am a member of the Swiss HST Team. For over a decade, I served as the president of our local Swiss club and I've been on the committee for more than 25 years.

I am A1OP in the ARRL, 8BDXCC, DXCC Challenge, 5BWAZ, WAS. I earned 3rd Place in the World Championships in Montenegro HST 2014. I have joined three big DXpeditions (510DX, 3W3MD, XU7MDC).

Name: **Fulvio Galli** – Age: 52

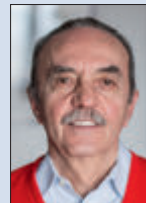

Great Britain

 Callsign: **G4BUO**


I had the great honour to be on the UK team in the first WRTC in 1990, and I competed again in 2000 and 2010. I was also the on-site referee for N5TJ/K1TO in 2002. My main contest interest is CW, and I posted three successive European top places in the ARRL DX CW Contest in the late 1990s. I was the 20m operator in 1999 when M6T set the European multi-multi record in CQWW Phone. In the last few years I led the rebuilding of the M6T team. DXpeditions have been mainly holiday-style from 6Y, 9M6, YJ, A35 and 5W, but in 2017 I did my first dedicated DXpedition as part of the A25UK team.

Name: **Dave Lawley** – Age: 61


Italy

 Callsign: **I2WIJ**


I got my license in December 1973, and few days later I entered my first contest!

Contester by nature, I try to be competitive in all that I do. More recently I was one of the J49Z Team for 5 years, then member of the CN3A team in CQWW SSB from 2006 to 2009, with three wins in a row. I took part at WRTC 2006 in Brazil as a referee and was team leader at WRTC 2010 in Moscow.

Name: **Roberto Soro** – Age: 67


Hungary

 Callsign: **HA3NU**


I was born in 1958 and I've been a HAM as club member of Radio Club HA3KNA since 1971. Between 1972-73 my call sign was HA3JNG and I got the HA3NU call in 1974. I also use the contest call-sign HG3R since 2007. I prefer CW, contesting and DX hunting and made over 500K QSOs since 1971. I was an active HST contester until the mid 90s and gained several medals in EU/World championships. I was a member of E44/HA1AG, ED9M, ED9Z, 9A0CI and Z38N teams. I'm an active contester mostly in the HP Assisted category with some good results: IARU HF gold/silver-bronze medal, EUHFC gold/bronze medal.

Name: **Laszlo Weisz** – Age: 59


Italy

 Callsign: **IK1HJS**


I was licensed in 1985. I started DXing and contesting on SSB and CW. I went on DXpeditions in 1990 to South Sudan (PA3CXC/ST0) and to Somalia (6O0N). I reached the ARRL DXCC Honor Roll in 1994. Then I helped to set up IR1Y and operated contests mostly from there, but also from CN3A, CT9L, D4C, EA8AH, IR9Y, IR2C, and II9P. I was honored to be I2WIJ's Team Mate in the WRTC 2010 in Moscow. I operated from many places such as CT9L, EF8R, II9P, or D4C. I joined WRTC 2014 in Boston as Team Leader and support WRTC 2018 as the ambassador for Italy.

Name: **Carlo de Mari** – Age: 56


Switzerland

 Callsign: **HB9CAT**


I grew up in the HB9H team for HF contesting. Licensed as SWL HE9AWB at the age of 13, I learned CW from my Dad, HB9LG, at 14, and participated actively in the team's contest activities. I finally got my license as HB9CAT in 1980. Due to job and family I just operate some of the main contests at HB9H or HB9CA; I got more involved again back in 2010 when I started visiting other teams and met a lot of fine operators. I liked the experience a lot so I kept traveling and operated from IR4M, D4C, ES9C, OM8A, 9K2HN and DR9A. I've been very proud to represent Switzerland as a Referee at WRTC 2014.

Name: **Marco Zollinger** – Age: 56


Japan

 Callsign: **JH4RHF**


Jun was first licensed at the age of 12. He started his radio life on 15 m and soon became interested in DXing and contesting. While at university he was an operator of the well known JA3YCK contest club station. He has participated in dozens of important DXpeditions during the past two decades, e.g. XF4L, ZL9DX, 3B9C or VP8STI/VP8SGI. Jun is said to be one of the quiet "unsung" heroes of the DXpeditioning realm.

He was an operator at WRTC 1996, WRTC 2000, WRTC 2010, referee at WRTC 2006 and WRTC 2014 and also a visitor of the first WRTC 1990 in Seattle.

Name: **Jun Tanaka** – Age: 54

 **Japan**

Call sign: **JK3GAD**



I was first licensed in 1983 at the age of 13 and started radio activity on HF, 10W SSB only with a dipole and GP. Joining the club station JA3YKC gave me great experience in DX contesting and the opportunity to meet fellow contesters from all over the world. Traveling to KL7Y in 1989 was my first DX contest operation. I relocated to England in 1998. From there, I traveled to various multi-op stations in Europe and operated from PI4CC(PA6HQ), DF0CG/DR1A, OT5A/OT#A, OK5H, LZ9W, G6PZ, OH8X, D4C, CN3A, 3B8MU. I participated in WRTC 2000 as a competitor, in 2006 as a referee, and in 2010 and 2014 as a competitor.

Name: **Kazunori Watanabe** – Age: 48

 **USA**

Call sign: **K4BAI**



I joined many Contest expeditions from TG0AA (Nov 1967) to PJ4A 2004-2016. Regularly I operated as multi op in DX and other contests from N4RJ, W4AN, W8JI, NQ4I & WW4LL and as a guest op at NQ4I & WW4LL SO in many contests often using the club call W4AN. After the SK of W4AN in 2004, the call was assigned to the South East Contest Club, where I serve as the President. I have been active as Single op from home in most contests on CW and SSB from 1955 to the present day. Since 2001 I have placed in the top few at KCDXC pileup copying contests in Dayton. I have been the Manager of the Georgia QSO Party for about 20 years.

Name: **John T. Laney III** – Age: 76

 **USA**

Call sign: **K1CC**



I started contesting after getting my license at the age of 13 as WN1DJG. As a teenager, I was top USA OP in the SO LP category several times in the ARRL DX Contest in the next few years. I joined the K1ZZ M/M crew. Those few years taught me very valuable contest skills, operating with K1ZZ, K1TO and others. Soon after, I had my own station. I was a regular top 5 USA finisher in CW and SSB in both ARRL DX and CQWW contests. I was chairman of the ARRL Contest Advisory Committee for a few years during this time. For the past few years I have been operating CQWW regularly at KC1XX in M/2.

Name: **Richard Assarabowski** – Age: 66

 **USA**

Call sign: **K5GN**



Dave was first licensed in New Jersey as WN2GAV in 1972. He moved to Houston, Texas in 1975 and eventually became K5GN. He is a member of the Texas DX Society and the ARRL. Dave's first contests were Field Days and the ARRL CD Parties in NJ. Today he enjoys DX and domestic HF contesting, mostly on CW. He has several Top-Ten finishes in CQ WW DX CW from YV, VP5, and A7, and holds the Asia SOABHP record. He has also made the Top Ten (USA) in the IARU HF, CQ WW, ARRL DX, ARRL SS, and has won the NA Sprint. He served as a referee at WRTC 2014.

Name: **Dave McCarty** – Age: 60

 **USA**

Call sign: **K1RX**



I've got my novice license in 1963 and received the call sign, WN1ABV. Call signs held in the past or used during contest events include: WA1ABV, WB2YEW, WA9NOI, WA1JUY, BV/K1RX, 4U1 ITU, IS0/K1RX, HV4NAC, VP2VDH, VP2VCW, KP4BZ, K1W and D4C. I served as President of the Yankee Clipper Contest Club for over 7 years and President of the local radio club, Port City Amateur Radio Club (NH) and am currently their Field Day chairman (continuously for the past 15 years). In 2014, I served as the Director of Antennas/Towers for the WRTC 2014 event held in Boston, MA.

Name: **Mark Pride** – Age: 67

 **USA**

Call sign: **K7BV**



Dennis obtained his first license in 1962 at the age of 13. Contesting and DXing immediately caught his interest and he has remained very active on the bands ever since, including DXpeditions to over 40 DXCC entities on all Continents. Dennis has many Top Ten finishes in a variety of contests using CW/SSB and Digital modes and holds 10 Band DXCC. Dennis served as Editor of the NCJ for five years. He competed at WRTC 2000 and was Ambassador-at-Large and a Referee for WRTC 2002. Owning and having operated several businesses provided all the experience to become the first ARRL Sales & Marketing Manager in 2006.

Name: **Dennis Motschenbacher** – Age: 70

 **USA**

Call sign: **K4AB**



Larry Crim, K4AB, discovered ham radio at the age of 12 when he read an article in an encyclopedia. He then spotted interesting towers in a neighbor's yard, knocked on the man's door and asked about them – paving the way for his lifelong passion for radio. Later, he came into contact with his contesting elmer Tom, N4KG who taught Larry about radio-sport which became his primary ham radio passion. Being so involved with amateur radio ultimately led Larry into professional radio. Currently K4AB is a finance manager but has never lost his passion for radio, especially contesting.

Name: **Larry Crim** – Age: 58

 **USA**

Call sign: **K7GK**



Interested in electronics and radio since teenage years I was first active in the mid 80s in Ukraine and Russia. This is where I was first exposed to the magic of amateur radio and fell in love with CW and contesting. After my move to the US, I got a US extra license and resumed DXing and contesting from the West Coast. I currently work in PA, where I am rediscovering the pleasures and the frustrations of contesting from the crowded lands of Europe. I am a proud member of the Northern California Contest Club and a former member of the Willamette Valley DX Club.

Name: **Denis Pochuev** – Age: 47 –
Calls used: KD7LHZ, AC7LX, J79A

USA

Callsign: **KC7V**



I am a member of FOC (First Class CW Operators Club) and the ARRL. I am an avid Contester and DX'er. I was first licensed in 1972, member of the Central Arizona DX Association (CADXA – past President 4 times) and one of the founding members of the VooDoo Contest Group and Arizona Outlaws Contest Club.

I have nine world wins as part of multi-operator contest teams. At one time I held Multi-Multi CQWWCW Contest world records in North America, Africa and hold the current MM CQWWCW world record for Asia from 9K2HN. WRTC referee in 1996, 2006 and 2014.

Name: **Michael Fulcher** – Age: 64 – Calls used: 5U7MF, 5V7MF, 7J1AEN, 9G5MF, CN2MF, EL2MF, K7MF, KC6MF, TY5MF

USA

Callsign: **N2GA**



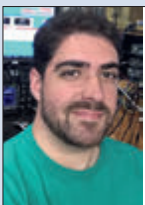
George is past president of the Long Island Mobile Amateur Radio Club, a member of the Yankee Clipper Contest Club and the Order of Boiled Owls of New York. George has operated from many countries including St. Lucia, the Turks and Caicos Islands, Grenada, the United Nations HQ and from the Azores as part of the Azores Nine Island Hunt.

George won first place world single operator low power operating as VP5GA in the 1999 CQ WPX CW contest. He has participated as a referee in three WRTCs: in 2000, 2006 and 2010. George wrote the contesting column for CQ Amateur Radio Magazine from 2011 until 2015.

Name: **George Tranos** – Age: 60

USA

Callsign: **KU5B**



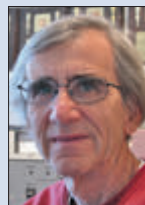
I was licensed in 2002 as KD5TMF and began my contesting career one week after getting licensed joining the W5SB crew for August NAQP SSB. Since then, I've had the pleasure to operate from K5NZ, NX5M, W5KFT, K5NA, NR5M, G6PZ, V31UB, K1TTT, NR3X, K9CT, K5YAA, N4JF, and P40CJ. I am currently a core operating member of the NX5M and NR5M teams.

This is my first experience at a WRTC.

Name: **Colin Jenkins** – Age: 30

USA

Callsign: **N2IC**



I have been contesting for 49 years, beginning at the age of 13. I moved to Denver, where I lived for 22 years. While in Denver I enjoyed contesting from Colorado and thoroughly enjoyed my association with other Colorado contesters.

I moved to the southwestern corner of New Mexico in 2003, where I built a house and antenna farm on an isolated hilltop. Using antennas that are modest by big-contest-station standards, I have had great contest success from New Mexico.

Thrilled to have been a previous WRTC competitor with my partners K6LL, K9TM, ZS4TX, N6TV and N5DX.

Name: **Steve London** – Age: 62

Lithuania

Callsign: **LY7Z**



I have been a radio amateur since 1986. I started at age of 12 with the help of my father LY2CY. In 1988 I got my first personal callsign UP2BTA, and later upgraded to LY2BTA and LY2TA. I like traveling and contesting and was active from some DX locations e.g. as C56TA, P4/LY2TA, TA/LY2TA, P4/LY2TA V25TA or C5P.

I was a competitor at WRTC 2002 in Finland, WRTC 2006 in Brazil, WRTC 2010 in Moscow and a referee at WRTC 2014 in Boston.

Name: **Andrius Ignotas** – Age: 44

USA

Callsign: **N6AN**



Radio contesting has been a part of my life since the mid 1970s.

At 14 I was WN6KJI, a know nothing Novice. I got my General license and built a Heathkit SB-102 around my 16th birthday. By 1977 I was an Extra class, held AA6RX, and thought the ARRL DX was the best event around.

I have had the opportunity to sign such calls as A73A, HC8N, K3LR, PJ2T, TG9AJR, VK6OH, VP2VFO, W6AQ, W6UE, XE2GG. In 2006 and 2014 I was privileged to compete in the Brazil and Boston WRTC events. This time I am honored to give back by serving as a referee.

Name: **David C. Hodge** – Age: 63

USA

Callsign: **NOAX**



Ward is a founder of the WRTC which began in 1990 and is Secretary of the Sanctioning Committee. He was inducted into the CQ Contest Hall of Fame in 2015. Since 2013 he has been President of the Yasme Foundation. He is the Lead Editor of the ARRL Handbook, Antenna Book, ARRL License Manuals, and is the author of Ham Radio for Dummies. Ward has been an active contester since his Novice days began in 1972. His list of contest operating spans four continents and includes a variety of good scores from home and multi operator stations such as HC8N, PJ4Q, KH6RS/NH6T, K3LR, K9CT, W7RM, KL7RA.

Name: **Ward Silver** – Age: 63

USA

Callsign: **NF4A**



Charles Wooten, NF4A, was first licensed in 1962 at the age of 12 as WN4IMC. In 1963 he became WA4IMC when he passed the general class exam. He obtained the callsign NF4A in October, 2000. He was active in contesting even as a novice in the ARRL Novice Round Up and later in many Sweepstakes and ARRL CD Parties.

He has been an operator at several DXpeditions including K4M, PJ7E and C82DX and a part of 9A1A. He is a very active contester and DXer and is the Southeastern Division Representative on the ARRL Contest Advisory Committee. He has been a referee at WRTC 2006, 2010 and 2014.

Name: **Charles Wooten** – Age: 69

 **USA**

 Callsign: **NN3W**


I started as a SWL in Southern California. Thanks to the efforts of my grandfather (ex W6URK, ex AA6HF) I became licensed at the start of sunspot cycle 22 in 1986. In my early years, I was an avid DXer and contester – thanks to the tutelage of many in the San Diego DX Club and the Southern California Contest Club.

After completing college, I resumed my amateur career in 2004 and have been active ever since – thanks to the support of the Potomac Valley Radio Club. I have won many regional and international contests from suburban Washington, D.C.

Name: **Richard F. DiDonna** – Age: 45

 **Czech Republic**

 Callsign: **OK2FD**


When the government opened 160m licenses for youth operators under 18, I applied and got my first call OL6ACY. From the very beginning I fell in love with contests. I was just 18 years old I got my first licence OK2BLG (1966). I was quite active and got a chance to change the call for a shorter one – so changed it to OK2FD in 1982. As a result of my activity and with the help of W5GN I got a chance to be part of the very first WRTC competition in 1990 in Seattle. Years of great contest and DX activities followed. In WRTC 1996 and 2000 I was a referee, in WRTC 2002 in Finland a competitor once again.

Name: **Karel Karmasin** – Age: 70

 **Austria**

 Callsign: **OE5OH0**


From the age of 14 to 16 I often listened to good operators running SSB pileups on shortwave. Then I started contesting on VHF and obtained my CW license a few months later. During my study years I was involved in planning and executing HF DXpeditions around EU/AF and became the Contest Manager of my local radio club OE5XVL, aka OE5T, which I am still the chairman of. Building a station is fun and time consuming and in urban areas one quickly hits large obstacles. Being invited to operate at big gun stations is a great honour and I join them when time permits. I prefer CW to SSB and particularly love multi-OP activities.

Name: **Oliver Huber** – Age: 43 – Calls used: OE5T

 **Slovakia**

 Callsign: **OM7JG**


I am 58 year old and I am an Electronic Engineer. I was first licensed in 1975 as OL9CGE and worked from the club station OK3KKF. During my studies at the Slovak Technical University I was active from the student club station OK3KFF, later OM3KFF. I participated in a lot of VHF contests with teams OK3KFF, OM3KFF, OM7F and on HF with teams OM8A, 9A8RR, 9A1V, IB0R, CR3A, CQ3B, CT9M, CR2X, D4C, OE3K. I was a referee at WRTC 2010 in Moscow.

Name: **Julius Greksa** – Age: 57

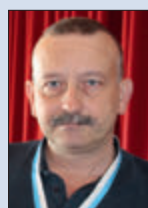
 **Austria**

 Callsign: **OE6MBG**


Born and raised in Graz, Austria, I have been interested in languages and technology since early in life. Watching one of my neighbours work on his ham antenna, I got interested in the hobby at the age of 15. My elmer OE6HZG introduced me to contesting in 1973 and I have not stopped since. I enjoyed participating at WRTC 2010 in Moscow along with Ivan, OE3DIA and serving as a referee for the French team in Boston in 2014. Occasionally operating from semi-rare locations, I also hold the call signs KH7XX and VY2YYY. This is my third WRTC.

Name: **Michael Schwab** – Age: 60

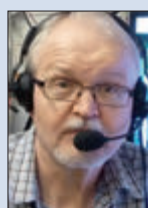
 **Denmark**

 Callsign: **OZ1IKY**


I started on 11 meters in the 1970s and became OZ1IKY in 1982. I owe it to Paul DK8LA (SK) that I mastered the fine art of CW. I like a good challenge and experiments with the radio, antennas and conditions. I used HF, VHF/UHF field days and contests as training for DXpeditions. But always remember – it has to be fun, it's only a hobby after all! I am a member of the Danish Contest Academy (OZ5E) and author of a Danish manual and small strategy book for contests and contest software (Win Test & N1MM +). Since 2013 I serve as the president of the Danish DX Group.

Name: **Kenneth Hemstedt** – Age: 54

 **Finland**

 Callsign: **OH1RX**


Jouko got his general license in 1978 as OH8MJ while studying at the maritime college. He was the first licensed Finn in Singapore as 9V1YB in 1988, part of the first fully legal DXpedition to Spratley Islands (Pulau Layang Layang) 5/1993 9M0S and one of the first licensed for 30m operation in India as VU3NYN in 1997. He led the WRTC 2002 in Finland as Chairman and was a referee at WRTC 2014.

You may have worked Jouko through the years in several DXpeditions and Contests as e.g. 9M0S, 9V1YB, A61AF, DU9F, TF3IRA, XX9X, XZ1N, BS7H, FO/OH1RX, OX/OH1RX, LA/OH1RX, TF/OH1RX, DU/OH1RX, OH0Z, ES9C, DU/OH1RX or DX7X.

Name: **Jouko Häyrynen** – Age: 61

 **Netherlands**

 Callsign: **PA3AAV**


Geert was licensed in 1977 and started serious contesting in 1988 at the PA6DX multi-multi station. After three years of multi-multi CW he started with multi-single SSB contesting at PA7MM, while participating in many contests on CW from his home station. He started SO2R contesting in 2001 which developed into the building and maintaining of a highly automated one tower SOAB contest station. Favourite contests are CQWW, CQWPX, RDXC, ARRL IARU and PACC. Geert serves as a member of the CQWW Contest Committee and is also an active board member of the local VERON section.

Name: **Gert Meinen** – Age: 60

 **Brazil**

Callsign: **PP5BZ**



I started with CB radio in 1993. Only in 2004 did I get my first HAM license as PP5BZ that I still have today. From the beginning I always liked DX and contesting in CW and SSB. I need to thank PP5VB Bosa and PP5JD Jaime for their help and teaching.

My first experience with WRTC was in 2006, when I was the host of the Youth Team PW5M. My focus is still on DX and contesting. But since 2012 I have started some IOTA activations of SA-088, SA-026, SA-027, SA-010 and SA-003. The PQ0T Trindade Is. (SA-010) was my biggest achievement. Since 2007 I have participated in CQWW and WPX in the PQ5B team.

Name: **Fabio Vieira Martins** – Age: 40 – Calls used: PQ0T, PX0F, ZW5F, ZY5P, ZW50I, PX5B, PS5F, PQ5M, ZW5W, ZX5B, PQ5B

 **Brazil**

Callsign: **PY8AZT**



I have been a radio enthusiast since I was 9 years old. Then, naturally, I became a Ham Radio Operator at the age of 12. My favourite mode is CW and contesting is my most important activity in Amateur Radio. I've been fortunate enough to be part of the Fortaleza DX Group's Contesting Station, PW7T. The most spectacular contest team I have ever met. From that amazing site we managed to set a world record and won many competitions. WRTC is also an important part of my contesting life – since 2006. I have been a referee and a competitor as well.

Name: **Luc Moreira** – Age: 43

 **Russia**

Callsign: **RM2D**



I am Swedish, but have been living in Russia for the past 12 years. I was licensed at the age of 14 as SM6LRR. My first contest was CQWW in 1981 and ever since I was hooked on contesting. QRT for almost 15 years I returned to the hobby and to more serious contesting in 2005 shortly before moving to Russia. I enjoy CW and SSB contests equally as a single or multi op participant. I have activated numerous contest calls: SK6RR, SLOCB, RK3AWL, RL3A, SK3W, RM5A, P33W, RTOC, OH4A, XV2D, RT2A, OF5Z and others. In 1977 I received an Extra class US licence as AA6RX.

Name: **Mats Strandberg** – Age: 52

 **Slovenia**

Callsign: **S50R**



HAM Radio has been my hobby for over 50 years. With the Callsign YU3TXT I had a great fun for next decades. After Slovenia gained its independence in 1991 I changed my callsign to S51SO and later to S50R. I have attained World Top Scores in international contests and Slovenian Championships made from Mt. Crni. I am also licensed as KB0YAB. Visiting some DX countries I operated, mostly in CQWW contests, as PJ2T, J6DX, J6A, S51SO/4U1, S50R/J6, J68RR, PJ2/S50R, J3/S50R, IG9A, SV5/S50R, 9A/S50R, S5C, S5040R. I have participated as a referee at WRTCs 1996, 2000, 2002 and 2010.

Name: **Leo N. Xhoko** – Age: 68

 **Slovenia**

Callsign: **S50XX**



I made my first QSO in 1993 as S56IIO. A few months later, my first contest was logged with 8 contacts on paper in red ink. I got a first taste of WRTC as a spectator in Bled in 2000, joined the Slovenia Contest Club after that experience and got involved in various club activities. I had the first taste of DX in 2003 from A61AJ. Basically I grew up with the hobby, made friendships, learned important lessons for my life and never got bored. Contests were and still are the magic: the excitement, the expectations before the start, a smile at a good opening or the concentration in pulling out a weak one from the QRM.

Name: **Kristjan Kodermac** – Age: 39

 **Slovenia**

Callsign: **S53R**



I got my first license in 1975 as a 13-year-old allowing me to operate the club station. I later got my first personal call YU3TYT, followed by YU3PR, S59PR and finally S53R. Traveling has taken me to over a hundred DXCC countries. I've always tried to get out there for CQWW and activated HC1OT, 4M2BYT, TO9R, different 4U calls and several portable operations (EA6, 4X, 5B, etc.) along with some longer term "Heavy-duty" contesting from ST2AR, A61AJ and PJ4Q lately. I was W6Q together with 9A3A in San Francisco in 1996, Director of Competition for WRTC 2000 in Slovenia and Referee in Boston in 2014.

Name: **Robert Kasca** – Age: 56

 **Slovenia**

Callsign: **S56A**



I have been a ham operator since my 17th birthday in 1962, first at the Michael Pupin Radio Club YU1BCD and later with personal callsigns YU3EA, S57MM and currently S56A. I was a competitor at WRTC 1996, I was heavily involved in WRTC 2000 project and I visited Finland during WRTC 2002 event where I operated OI2HQ on 15m CW at OH6AC's station. I took part in the 2002 K1B Baker Island DX-pedition. Later trips went to CR3L, CN3A, EF8U & ED8X. I have written many technical articles in various WW ham radio magazines and was invited as a speaker on automated HF contesting at the Dayton 1995 Contest forum. I was a referee in Moscow for WRTC 2010.

Name: **Marijan Miletic** – Age: 73

 **Slovenia**

Callsign: **S57AL**



I've been active in amateur radio since getting my first license in 1983 at the age of 14. My previous callsigns were YT3SW (1985 – 1992) and S50Y (1993 – 1995). I've also been active in WPX contests with the call S55T in recent years. My primary interest is HF contesting. I'm also a member of the national S5 ARDF team. This WRTC 2018 will be my 4th. In 1996 I was a referee in San Francisco (team N2NT & KZ2S), 2000 in Bled (Organizing Committee) and 2002 in Finland I was a competitor. I am an active Slovenia Contest Club member (SCC).

Name: **Ivo Jereb** – Age: 49

 **Poland**

Callsign: **SP4Z**



I became interested in ham radio in the local school club station SP4PBI in 1975 at the age of 10. I got my first license as SP4EEZ in 1980, SP4Z is my regular call since 2003. I have focused on contesting in the past several years of my ham radio hobby. This aspect of amateur radio is very exciting to me. Contesting is continuously advancing with new technical approaches, such as SO2R. It improves

the skills of contesters a lot.

As a referee of the WRTC 2014 I learned a lot from the competitors. I just hope we will have a 10 m band opening for short skip in Europe during the WRTC 2018 Contest.

Name: **Wieslaw Kosinski** – Age: 53

 **Canada**

Callsign: **VE3EY**



I have been involved with Ham Radio since 1979. I held my first callsign YT7WW up until 1993, VA3NA up until 2002 and then VE3EY from then onwards. I have operated in many major contests from VE3EJ, K3LR, K8CC and VE3JM as well as in many single op entries from the Caribbean such as TO3A, FJ/VE3EY, C6ANT and 9Y4/VE3EY.

I won CQWW CW 2016 in the Single Op High Power category in South America (6th in World). Contesting, Low Band DX-ing and CW are my favorite parts of the hobby. I was a referee of the last two WRTCs in Moscow 2010 and Boston 2014.

Name: **Nick Lekic** – Age: 54

 **Russia**

Callsign: **UA9MA**



My first QSO was in 1972 at the UK9MBA club station at the Omsk Railway Institute. My first own license was UA9MAF in 1975, then soon after I became UA9MA.

My passions are contesting and low band dxing. I know I have all countries confirmed and have won many domestic and international contests. I've visited many big contest stations including UK9AAN, RK0AXX, P3A, UP5G, CR3L, CN2AA & UP2L. My first WRTC was 2000 in Slovenia as a referee and in 2002 in Finland, 2006 Brasil, 2010 Russia & 2014 USA.

Ham radio and contesting are the main parts of my life.

Name: **Gennady Kolmakov** – Age: 63

 **Canada**

Callsign: **VE3XB**



Yuri has been on the air since 1969. He was first licensed in 1972. He loves all types of contesting – local, regional, national and international. His favorite modes are CW, QRQ. His favorite bands are 160 m and 80m. Yuri's first WRTC experience was in Brazil in 2006. He was also a participant at WRTC 2010 in Moscow and a referee at WRTC 2014 in Boston. His favorite contests are CQ WW, ARRL DX, RDXC and NAQP.

Name: **Yuri Romanov** – Age: 64

 **Ukraine**

Callsign: **UT7QF**



Radiosport is my life. I have been interested in Radio since High School. I learned Morse code at the age of 14. I got my license in 1981. The same year I went to university to study radio. I started actively participating in HF contesting in 1982. In 2000 I began constructing my own contest station. I am a multiple Ukraine HF Radio Champion and hold the title of "International Master of Sports of Ukraine". I am a member of UZ2M since 2007. I was a referee at WRTC 2010 and WRTC 2014.

Name: **Igor Syerikov** – Age: 53

 **USA**

Callsign: **W0YK**



Ed, W0YK, entered CW and SSB DX contests initially in the early 1970s as a way to work new band/mode-countries for DXCC. His interest rapidly evolved from DXing to contesting with his early learning at the K0RF multi-multi station. Today, CW and RTTY contesting dominate Ed's operating time. With his P49X call sign Ed holds the world SOHP record in CQ WPX RTTY and set a world SOHP record in the 2010 CQ WW RTTY. Ed is the manager for the NCJ NA RTTY Sprint and the contest director for the two CQ RTTY contests. He was inducted into the CQ Contest Hall of Fame in May 2014.

Name: **Ed Muns** – Age: 70

 **Canada**

Callsign: **VA2WA**



I got my first HAM RADIO license in October, 1986, at the age of 22. I have enjoyed many aspects of ham radio, I did a lot of VHF in the past including MS, TROPO, ES and EME, and of course DX-ing but contesting has been my focus for about 20 years. I've been involved in a few DX expeditions ZS1/RA3DQ, FP/VA2WA, TO2U, VE2EKA (CQ zone 2) and the following IOTA operations XL2I, CG2I (NA-128). I'm a member of the Contest Group du Quebec which was founded in 2006.

I'm creator and team member of the ham community independent Contest Online ScoreBoard project: <https://contestonlinescore.com>

Name: **Victor Androsov** – Age: 54

 **USA**

Callsign: **W1UE**



Dennis, W1UE, was first licensed in 1969, and has been contesting since 1973. Since retiring in 2007, he has been active in a number of Contest Expeditions. The most recent of which has been HQ9X. He operated high power as well as low power with numerous top scores in CQWW SSB and CQWW CW. Dennis is the current President of the Yankee Clipper Contest Club and Chairman of the ARRL Contest Advisory Committee.

Name: **Dennis Egan** – Age: 66


USA

 Callsign: **W1VE**


Gerry was licensed in 1975 and is mostly active in multi-op. His teams have been placed in the top ten or won contests in the US and Canada for most of the past 42 years, using HF through microwaves. He took part in many DX and contest expeditions including VE1SPI, CY0SPI, CY0SAB, 8P1V, 6Y6C, VP2M/VE1RM, KH6/W1VE, TI5/W1VE, and P4/W1VE. He is now active via remote from Zone 1 as VY1AAA. As a former ARRL HQ staffer, Gerry is a new-technology advocate, launching getscores.org live scoring in 2007, and is an expert in remote contesting.

Name: **Gerry Hull** – Age: 60


USA

 Callsign: **W6OAT**


Licensed in 1958, I'm a charter member and past president of the Northern California Contest Club and was president of the Northern California DX Club. I'm a director and treasurer of The Yasme Foundation. An active contester and DXer, I hold DXCC #1 Honor Roll, 5-band DXCC, 5-band WAZ and 5-band WAS and belong to the CQ DX and the CQ Contest Hall of Fame. I helped write the rules and was Chief Judge at WRTC 1990, was a principal organizer/publicity chairman of WRTC 1996 and a referee at WRTC 2000, WRTC 2002, WRTC 2006, WRTC 2010 and WRTC 2014. I'm a member of the WRTC Sanctioning Committee.

Name: **Rusty Epps** – Age: 74


USA

 Callsign: **W6PH**


Kurt was originally licensed as KN6LSG in 1955 in Salinas, CA. He attended his first Field Day in Pacific Grove with the Monterey Bay Radio Club (W6UCS) and got hooked on contesting. He has held the calls K6LSG, W2BQF, W1PH, and now W6PH. Most of his contest operations prior to 1998 were from his home in NH as W1PH. In 1998 he began operating from his Lone Pine QTH. He has operated CQWW DX contests from there and has operated ARRL DX Contests from VP9GE as VP9/W6PH for the last 18 years. He enjoys DXing and has 350 entities (with deleted countries) confirmed.

Name: **Kurt Pauer** – Age: 66


Latvia

 Callsign: **YL1ZF**


I started ham radio at the age of fifteen. I am a Board member of the Latvian Contest Club and Chief of the Latvian Signal Officer Society (YL1ZS/YL1S).

I have been an active contester and contest expedition member for the last decade. Some of my activities: C53ZF, C5P, C53M, C56R, YI9ZF, HN0Z, D4C, EA8AH, EG8FAS, CR3L, OH0I, II9P, EI7M, ES5ZF, ES9C, MM0DGR, CT9/YL1ZF, IT9/YL1ZF, EA8/YL1ZF, OH0/YL1ZF, EI/YL1ZF, PP5/YL1ZF, YL3AIW, YL4U, YL4HQ, etc. I am also member of the D4C and ES9C contest teams. My previous WRTC experience was 2006 (Brazil, PT5I) with YL2KLL.

Name: **Kaspars Uztics** – Age: 40

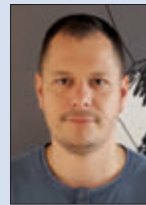

Latvia

 Callsign: **YL2KL**


My interest in amateur radio started in 1975. My first contest was the Baltics Contest 1975, then WAE-75. In 1982 I got my first call UQ2GKL. In 1995 I built my own station and got the call YL8M. From 1997 until 2001 I took part in the major contests from Cyprus (H20A, H22A. P38M, 5B/RS3A) several times and later from DX places including FG/YL2KL, C53M, C5P, IG9A, EE8A, EG8FAS, EA8EW, PJ4U, 9Y4W. In 2007 I joined the D4C team. Later activities were II9T, II9P, OM8M, ES9C and 3C3W in March 2018. I visited WRTC 1996, was a competitor in WRTC 2002 and WRTC 2006 and a referee in WRTC 2000, WRTC 2010 and WRTC 2014.

Name: **Girts Budis** – Age: 61


Serbia

 Callsign: **YT7AW**


I was licensed in 1991 at the age of 8 and started contesting on HF and HST(High Speed Telegraphy) in 1994 together with my father AI, YT3H, and brother Ivan, YT4RA. I was one of the founders of World Wide Young Contester in 1999. Currently I own the world record in Morse Runner, and in 2007 won a title of 1st person to copy CW at 200 WPM together with Fab DJ1YFK. Today I mostly like chasing DX on HF and contesting with YT0A.

Name: **Goran Hajosevic** – Age: 35


Serbia

 Callsign: **YU1EA**


I have been a ham since 1970. I took part in many HST competitions and was also active in ARDF. I was HST and ARDF Champion in the former Yugoslavia and Serbia. My best result in HST is in receiving letters at 280 signs/min.

My HF contest results include many World/EU wins in CQ WW DX Contest CW and SSB, CQ WPX Contest CW and SSB, CQ WW 160m DX Contest CW and SSB, RUDX Contest, RAEM Contest, EU HF Contest, CQ WW RTTY DX Contest, CQ WPX RTTY Contest.

I was an international referee at WRTC 2014 in the USA and have been for many years an international referee for ARDF and HST .

Name: **Dušan Čeha** – Age: 64 – Calls used: YT8A, E73EA, 4O7EA, EW/YU1EA, ZA/YU1EA


Serbia

 Callsign: **YU1LA**


Ivan lives in Beograd and is a ham radio operator since 1978. He is active on HF/VHF/UHF/SHF, mostly on 40m and 160m and in recent years also on 70cm and 23cm. Ivan operated as 9N1LA from the Mt. Everest Base camp at 5346m a.s.l. which is probably the highest amateur radio operation ever from a fixed spot of the earth. He was a referee at three previous WRTCs in Brazil 2006, Russia 2010 and USA 2014. He is an active contest operator and the winner of numerous world and domestic contests. Ivan has operated from several different DXCC entities – JA, 9M2, 9N1, XX9, VS6, PY, OK, DL, W, I, SV9, UA, LU.

Name: **Ivan Mastilovic** – Age: 56

Christian Janßen
President (executive management)

DL1MGB



First licensed in 1990 at the age of 14, Chris' HF contest career started with CQWW in 1993 and he joined the Bavarian Contest Club afterwards. Chris was active from over 20 DXCC entities including such rare ones as TX5K (Clipperton) and ZL8X. Chris and the Lagunaria DX Group were the organizers of the last four. The last two were awarded the "SWODXA DXpedition of the Year". In 2010 Chris was referee at the WRTC in Russia. Immediately after the WRTC 2014 Chris took over the lead of the WRTC 2018 in Germany together with Michael DL6MHW. Chris is married to Anja, DO2WW.

Axel Schernikau
Volunteer Manager

DL6KVA



Axel was licensed in 1983 as Y37RA. Later he became Y42DA and DL6KVA after the German reunification in 1992. His primary mode is CW and he is a member of the FOC (First Class CW Operators' Club). He was part of numerous top DXpeditions, e.g. VP8STI/VP8SGI, T33A, P29NI, 7QAA, S9YY, S21ZAS and S21ZDC. He also took part in numerous DXpeditions for the RDA (Russian District Award). Axel enjoys DXing with an additional focus on IOTA. An active contester, he is a member of the Bavarian Contest Club earning top scores e.g. as 4K0CW in CQWW 2014.

Michael Höding
Vice-president (fundraising and public relations)

DL6MHW



I was first licensed in 1982 as Y63UG, later DL6MHW. My first QSO was with 4U1ITU operated by K1DG. So there is a direct link to organizing WRTC 2018. I have always been a contester, and for some years also a DXer stopping with 332 DXCC entities. In 1996 I joined DA0HQ and afterwards some DXpeditions e.g. 9M8MH, C6AJR, VK9DLX and IOTA-Trips (mainly for contests) together with my XYL Andrea, DL3ABL. I am a member of the BCC. For the DARC contesting committee I developed software for contest management esp. for the WAEDC and the DARC Contest Logbook for DXers and award hunters. Inspired by K3LR I initiated the Contest University in Germany.

Rudolf Schwenger
Fundraising

DJ3WE



I am an Old Man in the true sense of the word: Licensed at the age of 17 in 1957! Ham radio has strongly influenced my life: It made me study rf-engineering, since I really wanted to understand wireless telecommunications. Well, I still don't understand them but the fascination of our hobby has never ceased to intrigue me. I enjoy contesting with an emphasis on Field Days. In an attempt "to give back" I served as a director at the board of DARC for two years. I operated as 9N7BCC (DXpedition) and 9V1QO (for 5 years). Contributing to organizing WRTC 2018 keeps me very busy.

Wolfhard Goldschmidt
Treasurer

DL9ZWG



At the age of 15 Wolfhard started his ham life as a SWL in 1975. He got his first license in 1977 as DM3QCG, later Y31VG and Y49JM. In 1992 he became DL9ZWG. In the eighties he was the SWL instructor for the Magdeburg district. His passions are short wave, DXing and contesting. He took part in many hundreds of contests over the years. In the nineties Wolfhard was the head of the local radio club of Burg. From 2006 until 2016 he was the head of the DARC Saxony-Anhalt division, the hosting region of WRTC 2018. Wolfhard is still active in ham radio education and youth work.

Ulrich Weiss
Site Evaluation

DJ2YA



Uli received his first license in 1955 and was Germany's youngest holder of an amateur radio license. He also holds the US extra class N2YA. In 1965 he was a founder of the Rhein-Ruhr DX-Association with DJ6QT. For the WAEDC Uli activated Guernsey as GC5AOM in 1969/1979. In 1970 Uli became the Head of the DARC-DX-Department. As the Team Mate of DJ6QT he took part in WRTC 1996. In 2000 he was a Referee in Slovenia and 2006 in Brazil. After 65 years of devotion to amateur radio with a special interest in DX and contesting as well as in technical matters, particularly antennas and their modeling, he is still active.

Ralf Theunert
Lodging and Hospitality

DK1DSA



I started Amateur Radio in 1996 as a SWL and got my license just a couple of months later with my first callsign being DG1HXD. After another year of training in CW I upgraded to Class A. Since then my callsign has been DK1DSA. While studying human medicine at university I had a break of several years away from ham radio. In 2010 I returned first as a SWL again and in 2011 was back transmitting on the shortwaves. I am now QRV on VHF/UHF/SHF as well. Besides digimodes and SSB I am still learning CW, a long trip for me lasting 20 years so far. I am the head of the local Radio Club of Wittenberg – a group with a long tradition.

Frank Neumann
Regional site evaluation

DM5WF



Frank was licensed in 1983 as Y59WF. After the German reunification he became DL6UFN and finally DM5WF. As a founder of the local radio club in 1990 he has been its head from the beginning. Since 2014 he is also Vice Chairman of DARC Brandenburg district. He has always been active in ham radio education to get young people interested in our hobby. Frank loves organizing activities and VHF-UHF-SHF-Contesting. Lead by him the Radio Club of Elbe-Elster won the German VHF-Championship 10 times. From organizing portable QTHs with a field day setup he gained a lot of knowledge for the WRTC site selection.

Andreas "Paul" Paulick
Antennas

DL5CW



I got my first Ham Radio license at the age of 16 in March 1975. My first callsign was DM3PFF. Until 1990, the year of the reunification of Eastern- and Western Germany, I never had the chance to experience the other side of a pile-up. It took until 2003 before I participated in my first DXpedition to Tunisia, TS7N. In the following years I went on large and not so large DXpeditions every year. As you can see from my callsign – CW is my favored mode and I especially like CW pile-ups. Most people call me by my nickname 'Paul' rather than using my real name.

Andreas Hellinger
Marketing

DC6RI



Andreas was licensed in July 1999. He is an active contester and a member of the Bavarian Contest Club, the American Amateur Radio League and the DARC. His main interests are construction of contest equipment and digital modes, esp. Winlink and Winmor for emergency communications. For the DARC Bayern-Ost district he is in the emergency communication team and responsible for the region of Lower-Bavaria. In the BCC Andreas works on the board of directors and is one of the main organizers of the BCC presentations in Friedrichshafen.

Robby Pöschk
Logistik & Equipment

DM6DX



Robby was licensed in 1991 as DH2UHF. Later he became DM6DX. He immediately started contesting in the team of the Cottbus Radio Club (Y24) with several top places in the DARC club championships. He is a member of BCC. His special but not only, focus is on RTTY contesting. After moving to Berlin-Spandau (D06) he was one of the motivators for the successful participation in the DARC club championship earning the title of the vice champion in 2017. Robby is also active in the DARC contest department. He is the main organizer of the German Contest University which is held at Ham Radio in Friedrichshafen.

Hajo Weigand
Award Manager

DJ9MH



Hajo was licensed in 1964 with DJ9MH. He is long time contester and DXer. As a member of the Bavarian Contest Club he was part of many activities and a member of the board of directors at the BCC. His numerous DXpeditions, esp. to European islands were connected with contest entries. Hajo is an active award hunter and was the manager of the Worked All Europe award. In this role he was a driving power behind the development of the DARC Contest Logbook. Hajo is always on the air. Beside regular contests every weekend he enjoys SOTA (summit on the air) - connecting hiking with ham radio he has activated many summits.

Ben Büttner
IT infrastructure

DL6RAI



In 1978, Ben started as a SWL and became DL6RAI in 1980. Initially he was interested in DXing but the contest bug bit him in 1981 when he took part in WAEDC SSB for the first time ever. With friends he built and maintained a contest QTH in the lower Bavarian countryside, later known as DQ4W. For several years, Ben served on the CQWW Contest Committee. Another major project was supporting CLX, a Linux-based DX Cluster software, together with Franta Bendl, DJ0ZY in the early 2000s. Today, Ben enjoys operating contests from his home with a low profile station – typically logging around 10,000 QSOs per year. He is the president of the Bavarian Contest Club.

Klaus Wöhler
Press Officer

DF9XV



Klaus, licensed since 1977, has been interested in contesting right from the start and has been a member of the Bavarian Contest Club since 1988. Building antennas and RF power amplifiers has long been part of his amateur radio life. The climbing of antenna masts - sometimes up to 70m high has become a passion. If there happens to be a convenient 40m beam to be installed, so much the better. Since 2014, Klaus has concentrated on optimizing his own antenna systems and good placings in the DL section of the CQWW DX contest have resulted.

Felix Riess
IT Infrastructure

DL5XL



Felix was first licensed in 1986 at age 15 with the call DH2AAD. Later he became DL8OBC and finally DL5XL in 2000. He is an electrical engineer by profession, and works for a shipping company in the field of polar research which gives him the opportunity to regularly operate from Antarctica as DP1POL. In ham radio, he enjoys operating CW, digimodes, DXing, and award chasing. Felix was a competitor at WRTC 2000 in Slovenia, and also joined DXpeditions including 5A2A and ZL8X. He is a long time member of Rhein Ruhr DX Association and former chairman of the CW Activity Group (AGCW-DL).

Steffen Kaiser
Media-Team

DL5SFI



Steffen was infected with the ham radio virus in 1982 by ARDF (amateur radio direction finding). He was first licensed in 1989 as Y51PF. Later he became DL5SFI. Beside smaller DXpeditions to HB0 and 4U1ITU Steffen is an active supporter of the digital ham radio infrastructure. Earlier with packet radio and now with hamnet or DMR. He is one of the hamnet team in Stuttgart and the technical administrator of DB0ST. Besides digital modes Steffen is also active on short wave, winning the bronze medal in the Berlin-Brandenburg-Contest in 2017 with DA0WRTC. Steffen works in a rescue dog team for the Johanniter paramedics.

Dieter Ziehn
Board Member

DK4QT



Dieter was licensed in 1968 as DK4QT. He is long time contester and DXer and a member of the Rhein Ruhr DX Association. For several years Dieter was the chairman of the DARC Westfalen Nord district and a member of the DARC board of directors. He was the main organizer of the HST Championships 2011 in Germany. As an antenna and tube amplifier specialist he has been active in the construction and education facets of our hobby. He's also a runner in Fox-Hunting events. Dieter was active as OH0/DK4QT, VK2IKS, ZL2-4/DK4QT, 3A/DK4QT, OZ/DK4QT & CT9/DK4QT. He is a member of the CR3L/CR3W core team, mainly organizing the RTTY entry's from Madeira Isl. with a resulting first place world wide.

Uwe Könneker
Competition

DL8OBF



Prior to starting my ham life in 1985 as DH8OAE. I was a SWL and built my own receivers, helped and coached by DL7FZ. Today I have the callsign DL8OBF as well as KE7CVQ, and I act as VEC for US licenses tests. I also operate DB2B in contests. I have operated from various countries including taking part in a few contests from Madeira, operations from Seborga, the Bahamas, Uganda, Bangladesh etc.. I am President of the Rhein-Ruhr-DX-Association (RRDXA). The RRDXA is proud to have an active part in staging WRTC 2018 in Germany. I am proud to provide my share of the work in being responsible for running the competition and controlling its rules.

Ulf Ehrlich
Qualification

DL5AXX



I started as a SWL at the age of 14 and got infected with the contest virus while at my studies in Ilmenau, where I met Y24UK and Y23EK at Y34K. I have been a part of the Y61HQ/DA0HQ team from the beginning. After moving to my present QTH I was able to set-up a modest contest station with two towers, where all the DM6V activities take place. In 2000 I shared a contest expedition to GD for the first time. That was the beginning of the group that is responsible for CR3W now. We have won CQWW CW in the Multi-Multi category several times.

Randy Thompson
Judging Committee

K5ZD



Randy Thompson, K5ZD, has been licensed and active in contesting since 1973 at age 13. He is an accomplished contester, having multiple single-operator wins in the ARRL Sweepstakes, CQ WW, and the CQ WPX, among others. Randy is a past editor of the "National Contest Journal" and a co-founder of the eHam.net website. Randy was the Director of the CQ WPX Contest for 2008-2012 and Director of the CQ WW for 2012-2015. He is a member of the CQ Magazine Contest Hall of Fame. He has competed in five World Radiosport Team Championships and was a Co-Chairman of the organizing committee for WRTC 2014.

Dietmar Kasper
Software

DL3DXX



I was first licensed in 1981 with the call Y33VL. From the start I was interested in Contesting and DXing and involved in multi operator contests at Y35L. Since 1985 I have been part of the Y61HQ/DA0HQ team every year. Reunification in 1990 changed a lot of things. We rebuilt our club from scratch at a new location outside the city. I am involved in the development of the DR1A station in Goch. Besides contesting my passions are traveling and DXpeditions. Over the years I have been QRV from all 6 continents. I enjoy pileups but I like tough contacts on difficult bands like 160 meters even more.

Bernd Länger
Judging Committee

VK2IA



Bernd was first licensed as DL1VJ in 1978 at the age of 16. It didn't take long for him to recognise that his passion was CW and contesting. After a few years of multi-op contesting from local stations, he was hit by the travel and pile-up bug that motivated him to visit semi-rare contest locations using a variety of calls, eg 5T5XX, JY8VJ & TA1KA/2. In 1997 Bernd emigrated to Sydney, Australia with his wife Claudia and secured VK2IA as his new Australian amateur radio identity. Other currently active Australian call signs of Bernd are VK6AA and VK9DX (ex VK9AA). He participated in WRTCs in 1996, 2000, 2010 and 2014 as competitor or referee.

Nodir Tursoon-Zadeh
Judging Committee

EY8MM



Nodir Tursun-Zade, EY8MM, is an accomplished operator and DXer, holding many contest and DX records on 160 and 6 meters from Tajikistan. He served as a referee at WRTC 2006 in Brazil and was on the judging committee at WRTC 2010 in Moscow and WRTC 2014 in Boston. Nodir started contesting in 1984 as UJ8JMM and over the years he combined his love of contesting and Low Band DXing to some impressive results from his challenging location in Central Asia. He has been a member of several DX-expeditions including YA5MM, VP8ORK, FT5ZM etc. and is a Member of the Yasme Excellence Award.

DJ6QT – a Genuine WRTC-Pioneer

Ulrich Weiss – DJ2YA

Without any doubt, Walter, DJ6QT, can rightfully be called a pioneer hero of the WRTC. Four times a Competitor and once a Referee, he was part of not less than six World Radiosport Team Championships.

When in 1990 some American radio amateurs took up the idea of the Good Will Games and invited Russian hams to a contest in Seattle, Walter was one of the first to recognize that there was the chance to turn the bilateral event into a real international championship. He suggested to extend the invitations to all contest clubs world-wide and the success of the first WRTC in Seattle became the foundation stone of all WRTCs to follow.

With Stefan, DL5XX, as his Team Mate, Walter formed one of the 22 teams in those days hosted at a volunteering station in the Seattle area. In 1990 the competition lasted just 12 hours and the bands were only 40 to 10 meters, but the equal transmitting power of 100 watts for all two-op-teams has principally been kept unchanged until today.

Walter and Stefan achieved the 5th rank as the best non-US team confirming Walter's excellent expertise and world-wide fame in his 25 years of contesting.

Walter's activities were not confined to optimizing his own station and his personal results. After founding the Rhein Ruhr DX Association with some friends he became the Head of the RRDXA for decades and led the club to dominate the CQWW-club competition for many years. As the first German ham he was inducted into the CQ Contest Hall of Fame. For almost ten years he served as the DARC Contest Manager and spent countless hours checking contest logs with his team long before computers could be used.

WRTC2018 without Walter could hardly be imagined. Already 2014 in Boston he had signed the plea to stage the WRTC in Germany and he contributed a host of excellent ideas during the first preparatory meetings were held at Rheine and Jessen. Unfortunately health problems didn't allow him to join in the highly demanding work of the organizing committee, but his verve inspired a great number of hams to volunteer.

Walter passed away in July 2016. We feel deeply sad that fate has not granted Walter the pleasure of enjoying his WRTC in Germany.

Media Team

These people have very important roles, their work in publicity helps to ensure the future of the WRTC. Through taking photos, asking questions and collecting stories, the spirit of friendship, sport and volunteering in the WRTC event will be presented to the world. Please give them your full support.



DG1HUF
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Photographer



DH2FBL
Ralf Dindorf
Photographer



DM6WAN
Steffen Hamperl
Videographer



DH9KFC
Hartmut Schramm
Videographer



DL7ON
Fritz Littmann
Photographer



DM9EE
Carsten Dauer
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DL1EYH
Armin Geyer
Videographer



DD5LP
VK2JI & G8GLM
Ed Durrant
Interviewer



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David Siddall
Author of The WRTC2018-Book

WRTC 2018 Volunteers

The Unsung Heroes



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- DK2AJ – Axel, DK2LO – Olaf, DK2NVA – Gunter
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- DK5OPA – Dietmar, DK6AH – Andreas
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 DM7JO – Joshua, DM7PCH – Cornelia
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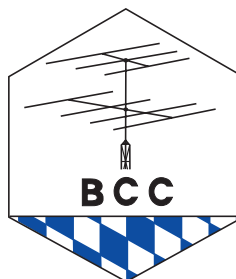


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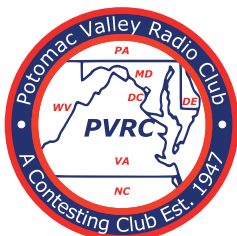


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4 Tents

Frankford Radio Club (FRC)

3 Tents

Society of Midwest Contesters (SMC)

2 Tents

Bavarian Contest Club (BCC)

Florida Contest Group

Potomac Valley Radio Club (PVRC)

1 Tent

Alabama Contest Group

Arizona Outlaws Contest Club (AOCC)

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Contest Club Finland & Finnish Amateur Radio League

Contest Club Ontario

DARC OV P62 - Virtueller Ortsverband

DARC-Distrikt Berlin (D)

Dave and Barb Leeson (W6NL/K6BL)

DogBitchLake Contest Group SB3W/SC3A

European DX Foundation (EUDXF)

In Honour Conny Schips, DL1DA

JA WRTC Friends

K5WA Honoring Richard and Susan King - K5NA/K5DU

Lagunaria DX Group

Long Island DX Society

Mad River Radio Club

Northern California Contest Club (NCCC)

Northern California DX Foundation (NCDXF)

Pizza Lovers 259 (PL259)

Rhein Ruhr DX Association (RRDXA)

Rochester DX & Contest Club and Minnesota

Wireless Association

Slovenia Contest Club

Team K3LR

Tennessee Contest Group

The South German DX Group (SDXG)

In Memoriam Bob Carpenter G4BAH

In Memoriam Bruce Knox W8GN and Bob King W3GH

In Memoriam Carl D. Cook AI6V

In Memoriam Coco DG8FAY

In Memoriam Dallas Carter, W3PP

In Memoriam Dave Kalter KB8OCP

In Memoriam David Collingham, K3LP

In Memoriam Dr. Dietrich Seyboth, DJ2MG

In Memoriam Fiorenzo Mainoli, HB9FAQ

In Memoriam Hans-Juergen Bartels DL1YFF

In Memoriam Heinrich Lumpe, DJ6JC

In Memoriam Horst Weissleder DL5YY

In Memoriam Ingolf Schuster, DL4JS

In Memoriam Joerg Puchstein DL8WPX

In Memoriam John Kanzius, K3TUP

In Memoriam Karl Hille, DL1VU

In Memoriam Lothar Wilke DL3TD

In Memoriam PVRC Silent Keys W3AU,
W3GRF and W4KFC

In Memoriam Rich Strand KL7RA

In Memoriam Richard Marschall, DL1XY

In Memoriam Ron Wetjen WD4AHZ

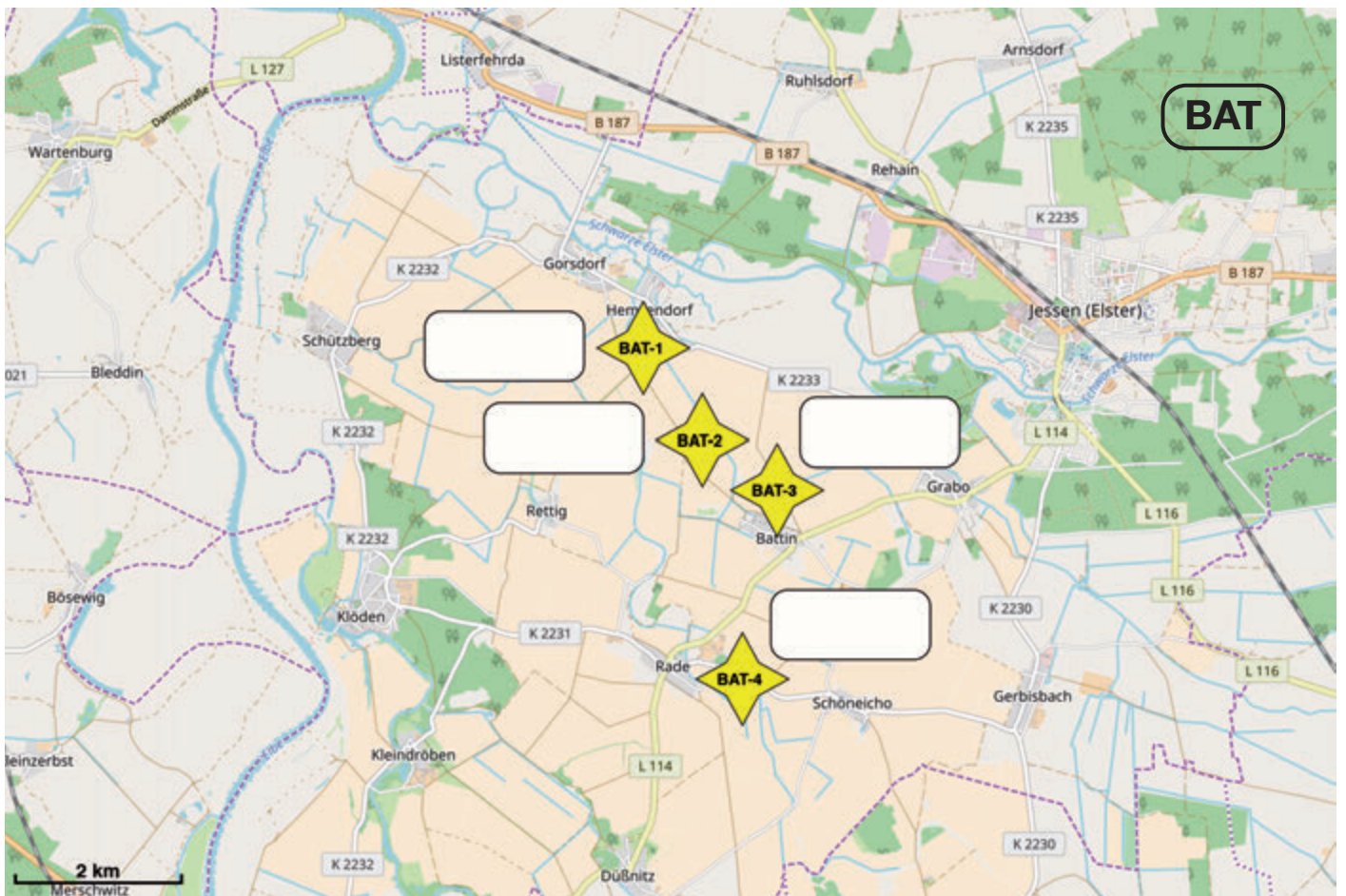
In Memoriam Val Edwards, W8KIC

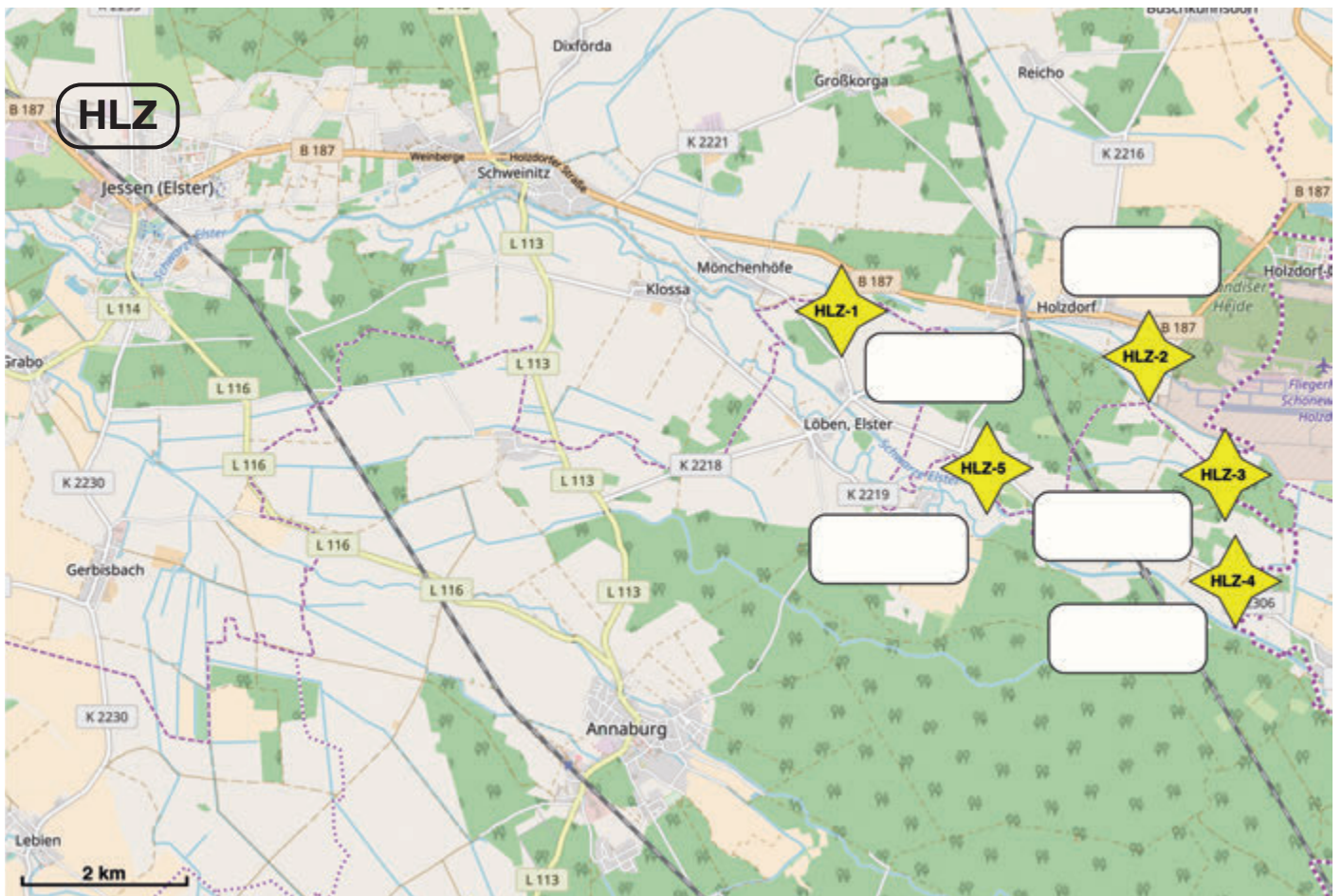
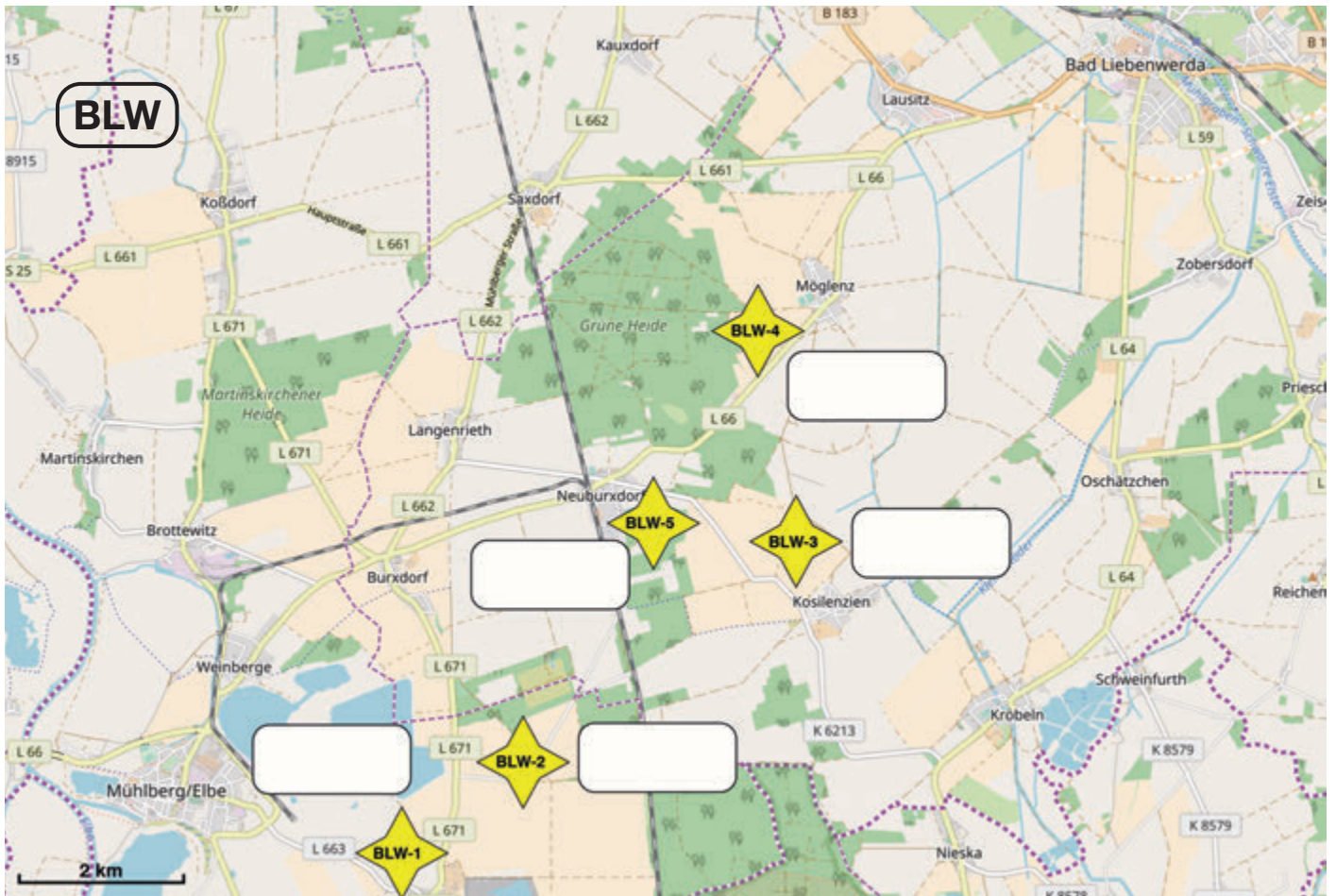
In Memoriam Walter Skudlarek, DJ6QT

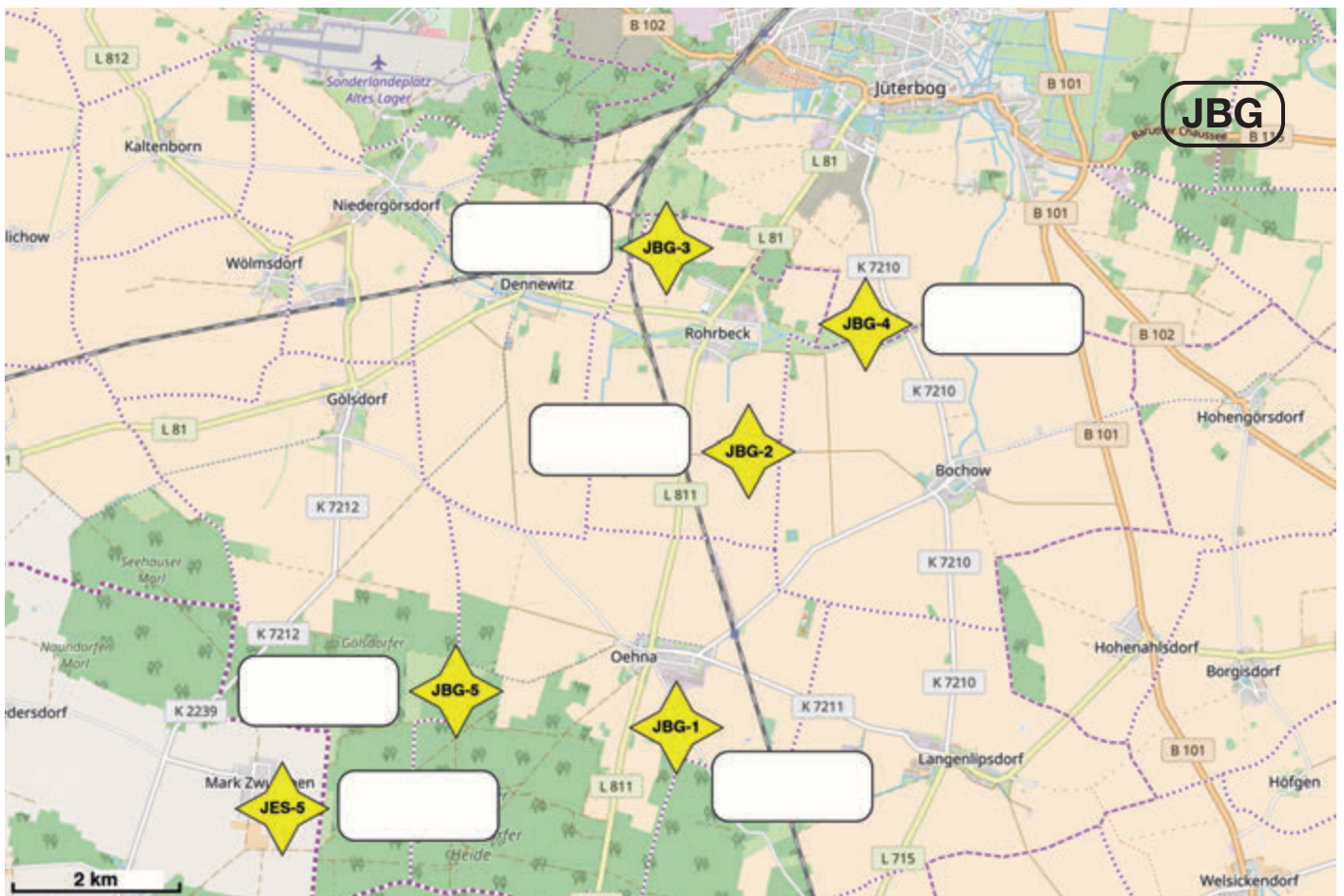
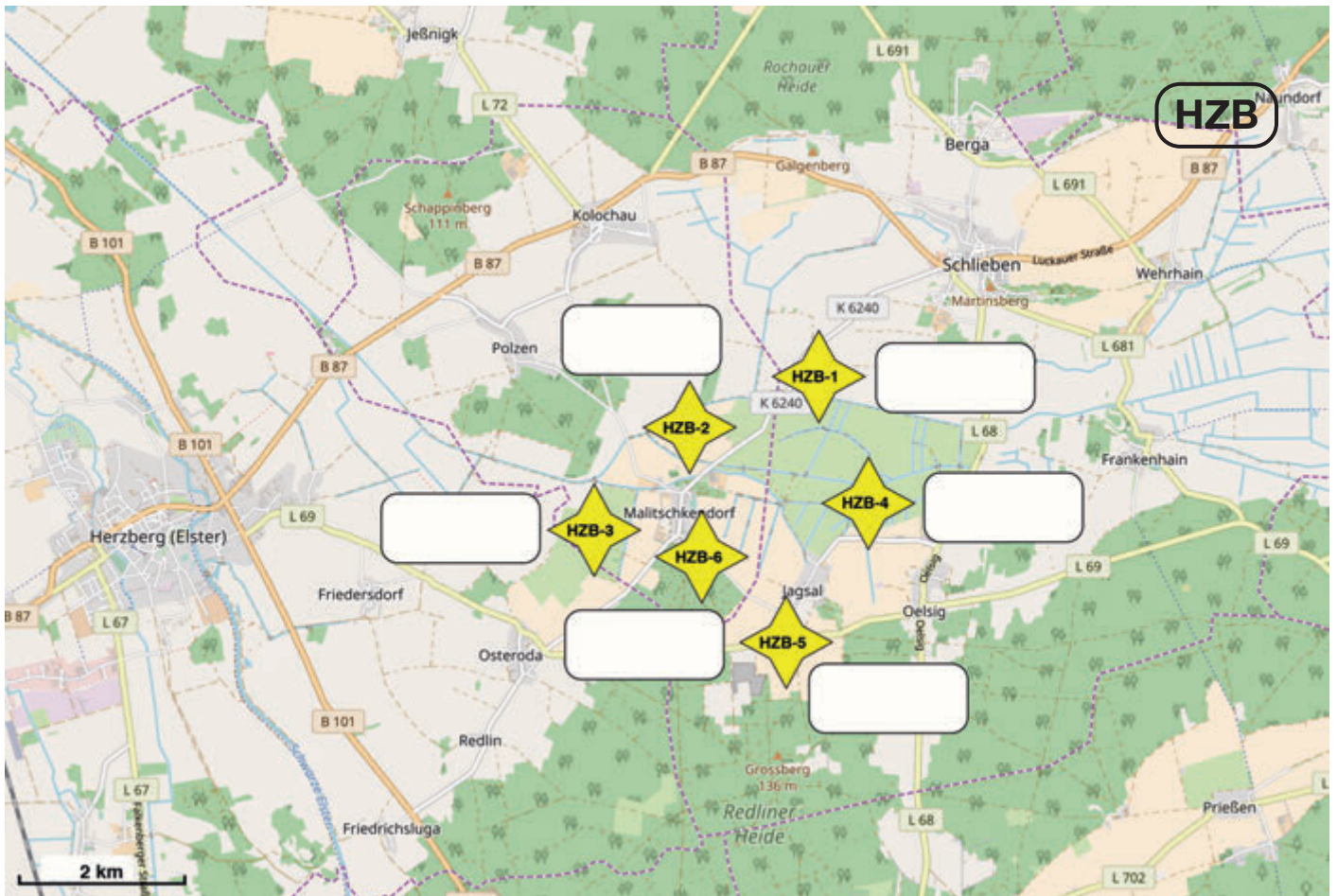


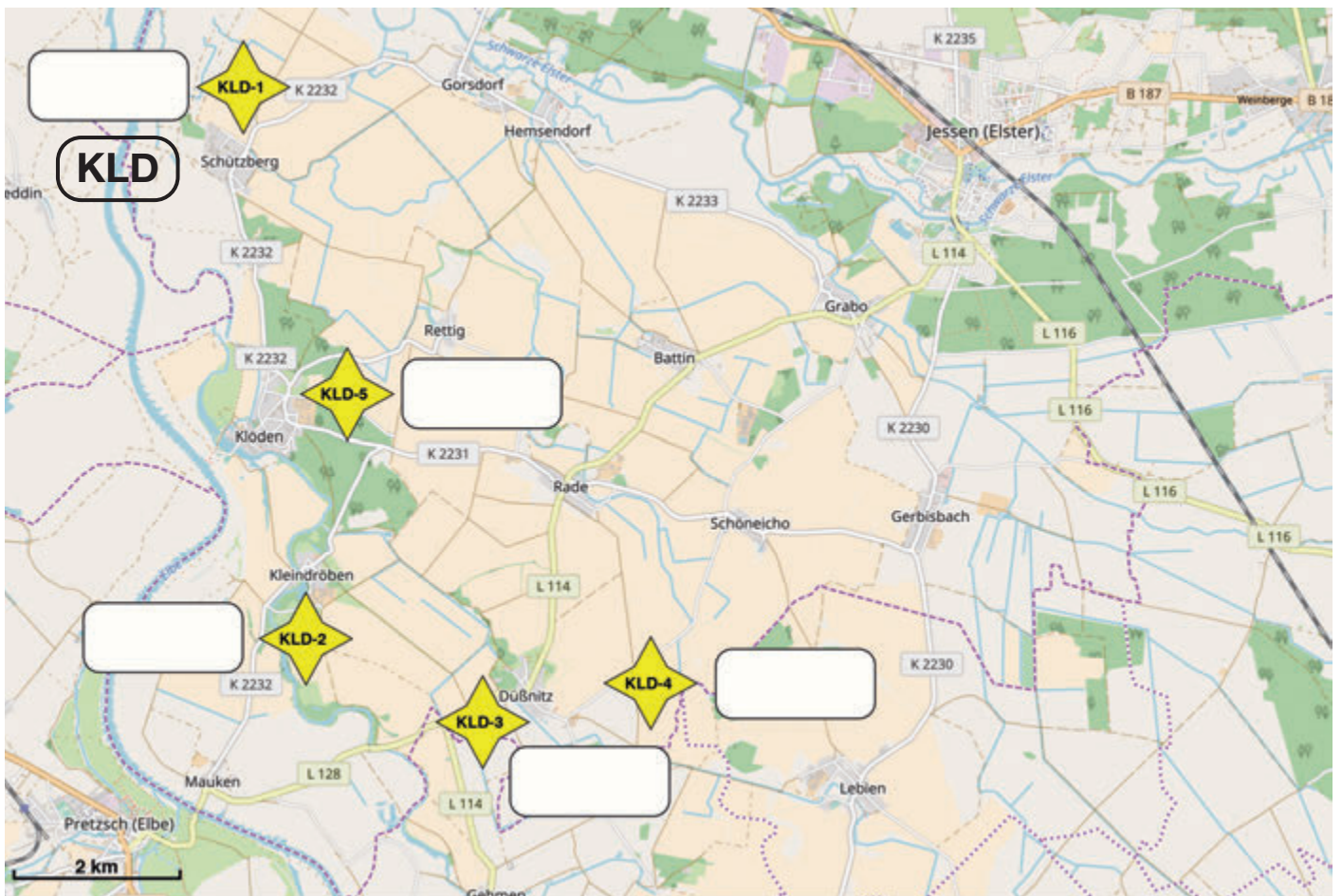
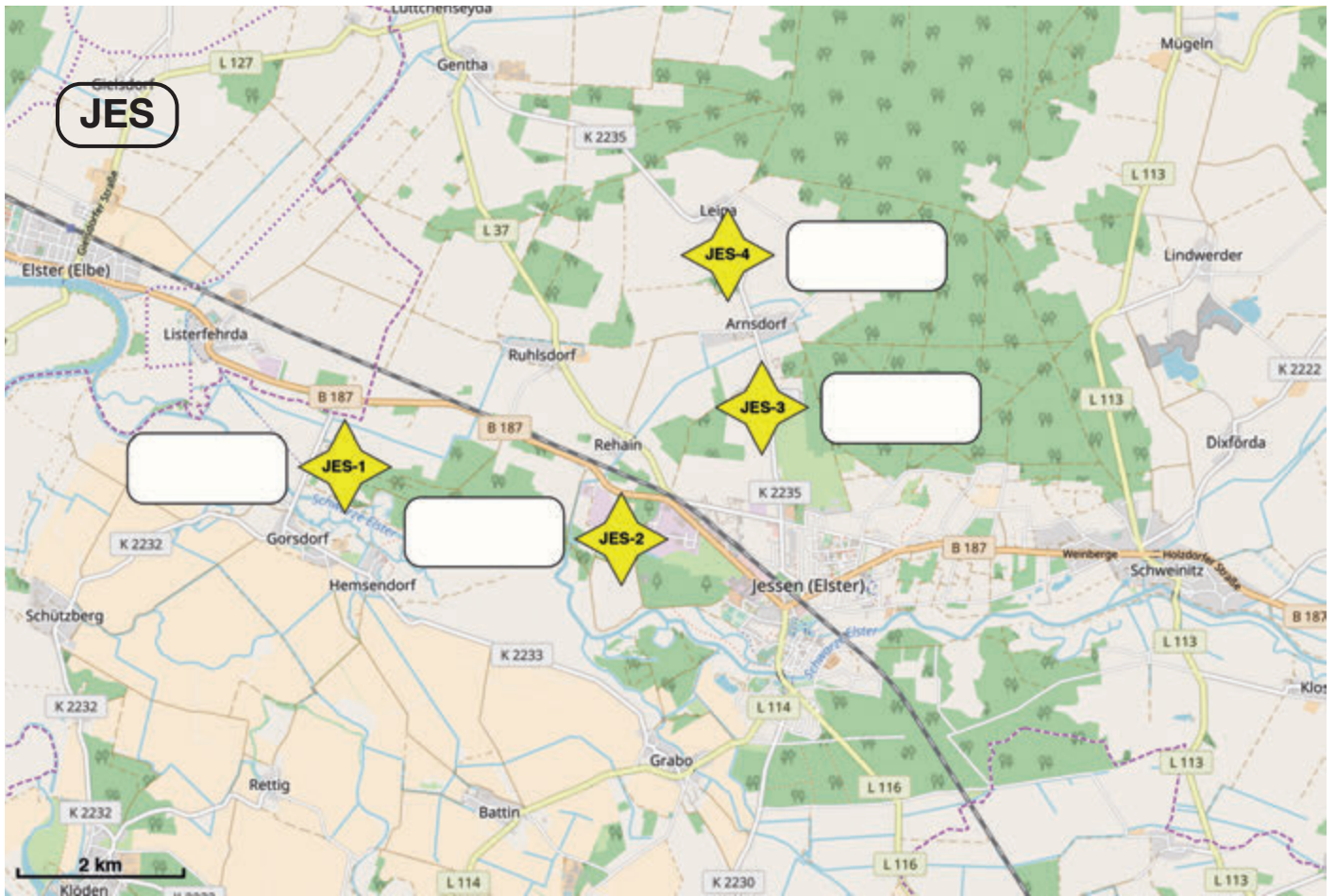
Many thanks for providing the WRTC 2018 sites

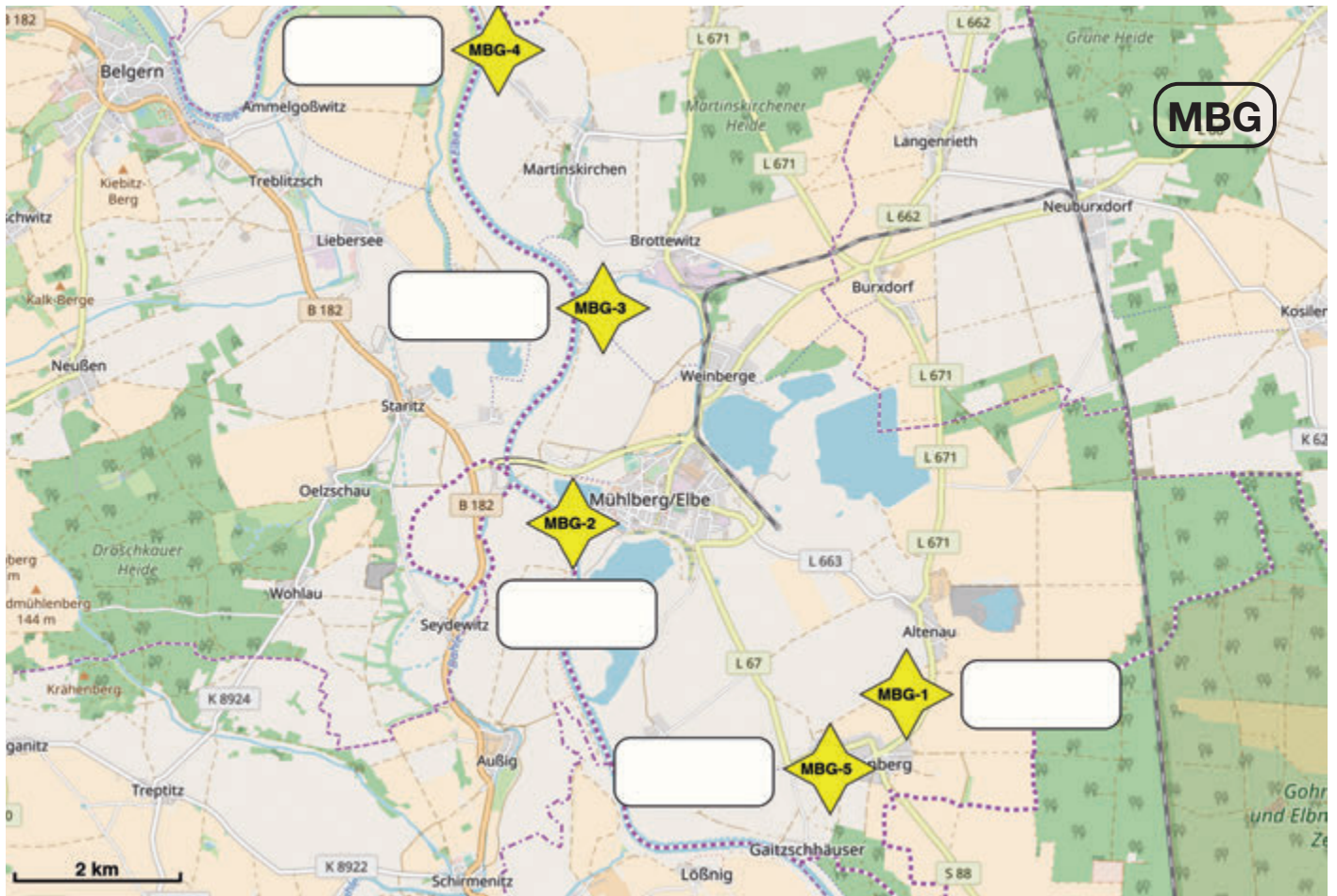
Stadt Jessen | Stadt Zahna-Elster | Stadt Uebigau-Wahrenbrück | Stadt Mühlberg/Elbe | Stadt Annaburg | Seydaland Vereinigte Agrarbetriebe GmbH & Co KG | Oehnaland Agrargesellschaft mbH | Landgut Wiederau GbR | Landgut Elbeland Axien e.G. | Glücksburg Agrar e.G. | Gemüsering Jessen GmbH | Elsterland GmbH - Warenbrück | Burgwall Agrar GmbH Malitschkendorf | Aue Agrargesellschaft e.G. Prettin | Agrargenossenschaft Mühlberg/Elbe e.G. | Agrargenossenschaft Holzdorf e.G. | Agrargenossenschaft Elstermündung e.G. | Agrargenossenschaft Marktfrucht & Milch Düßnitz e. G. | Agrargenossenschaft Gräfendorf e.G.

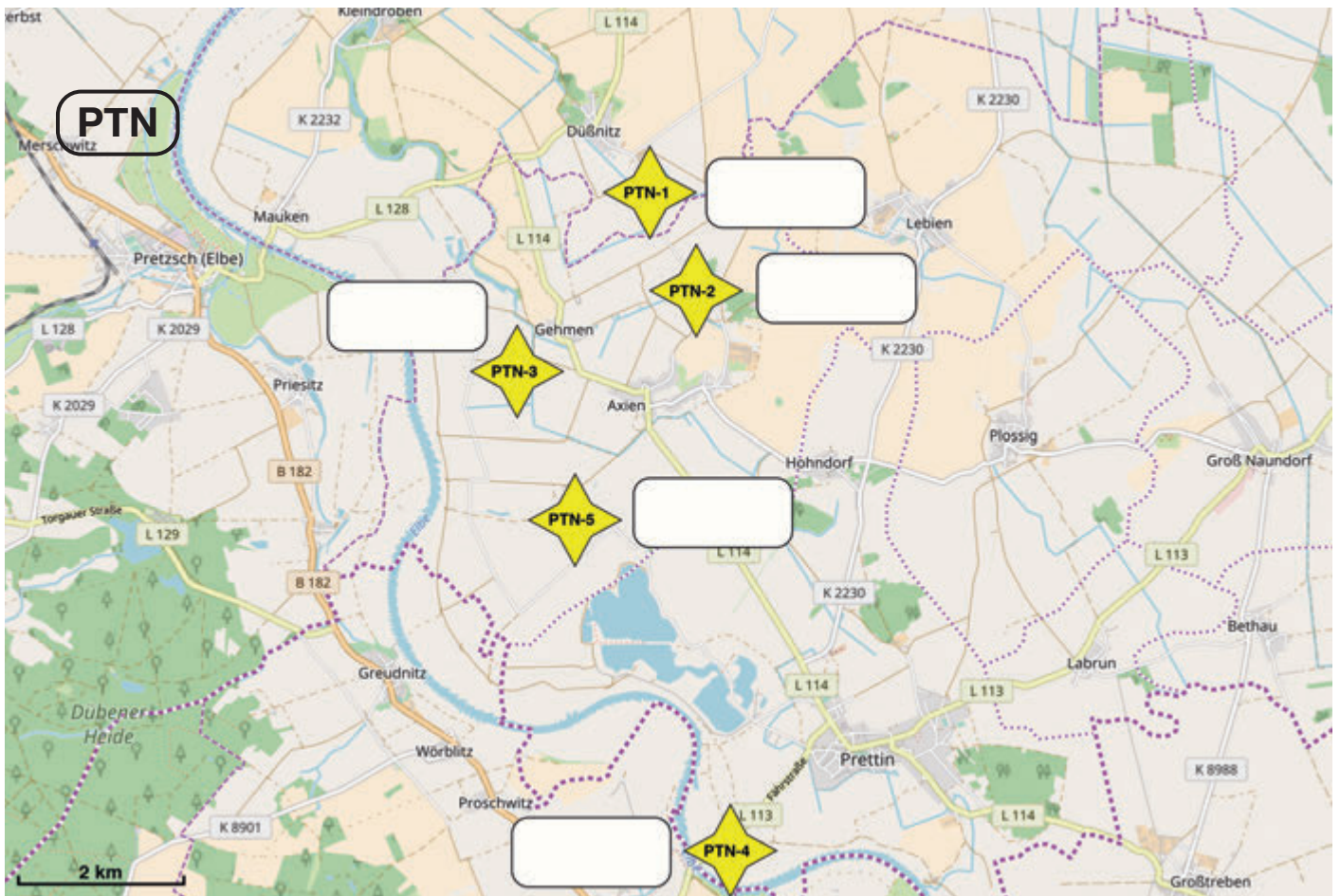
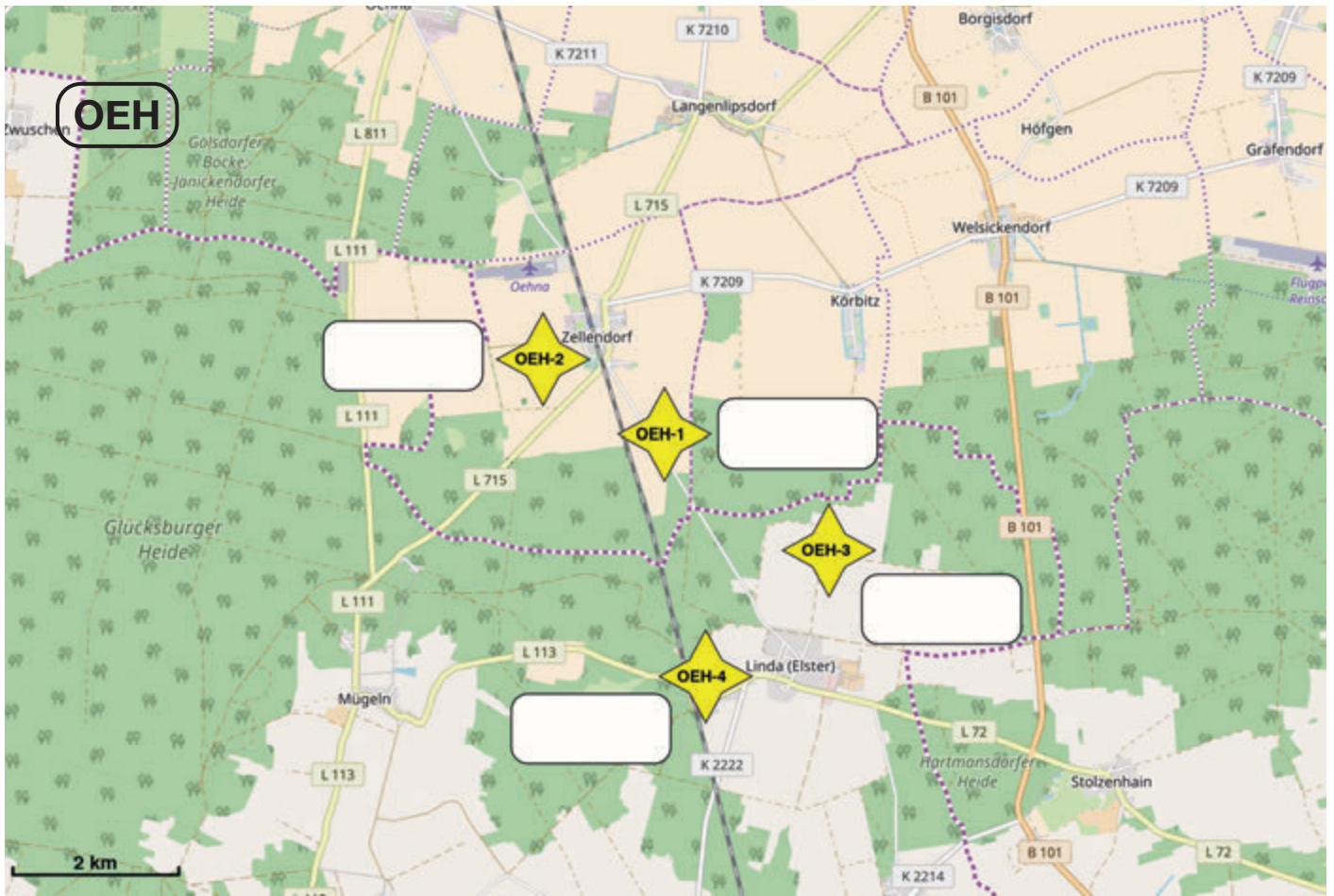


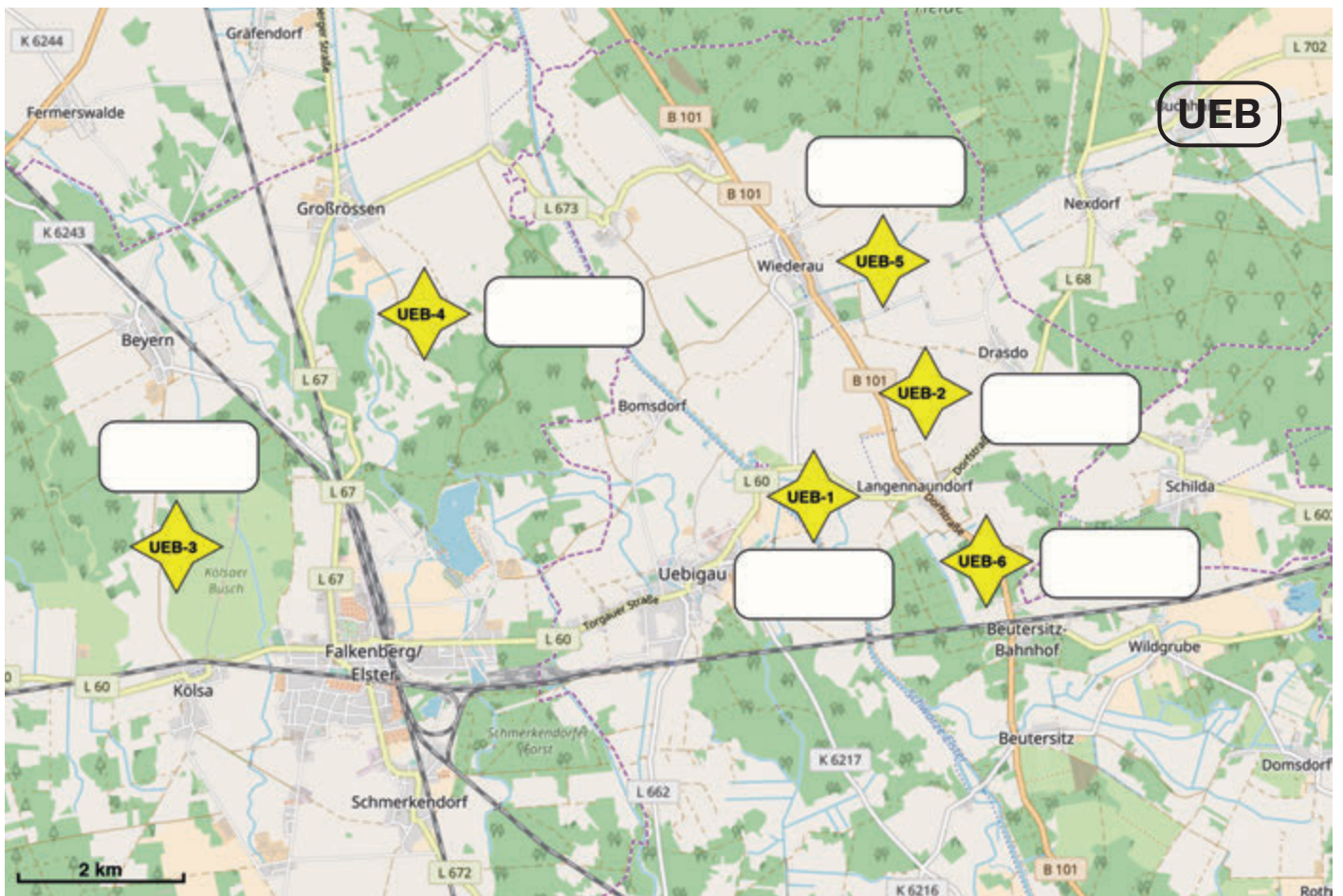
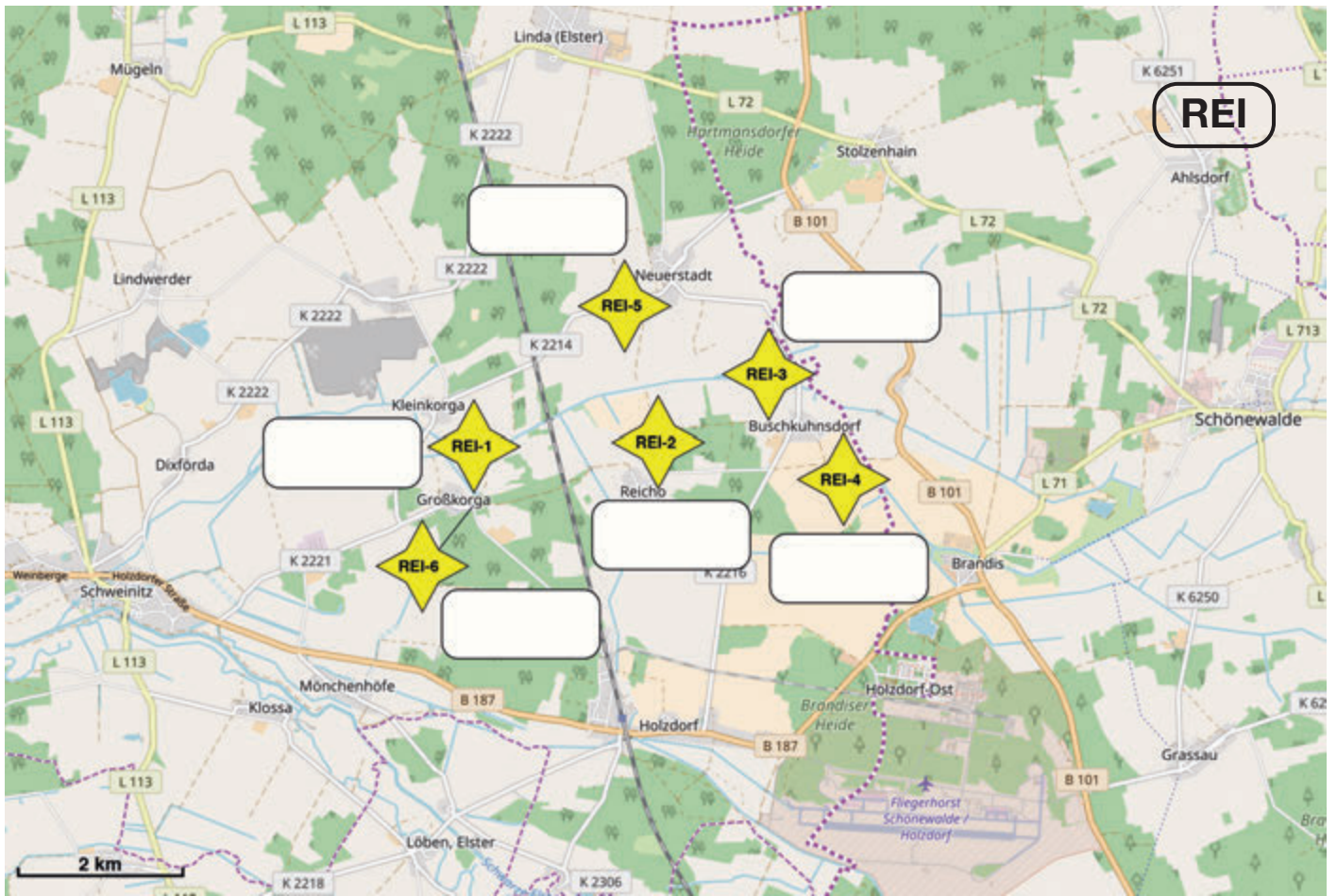


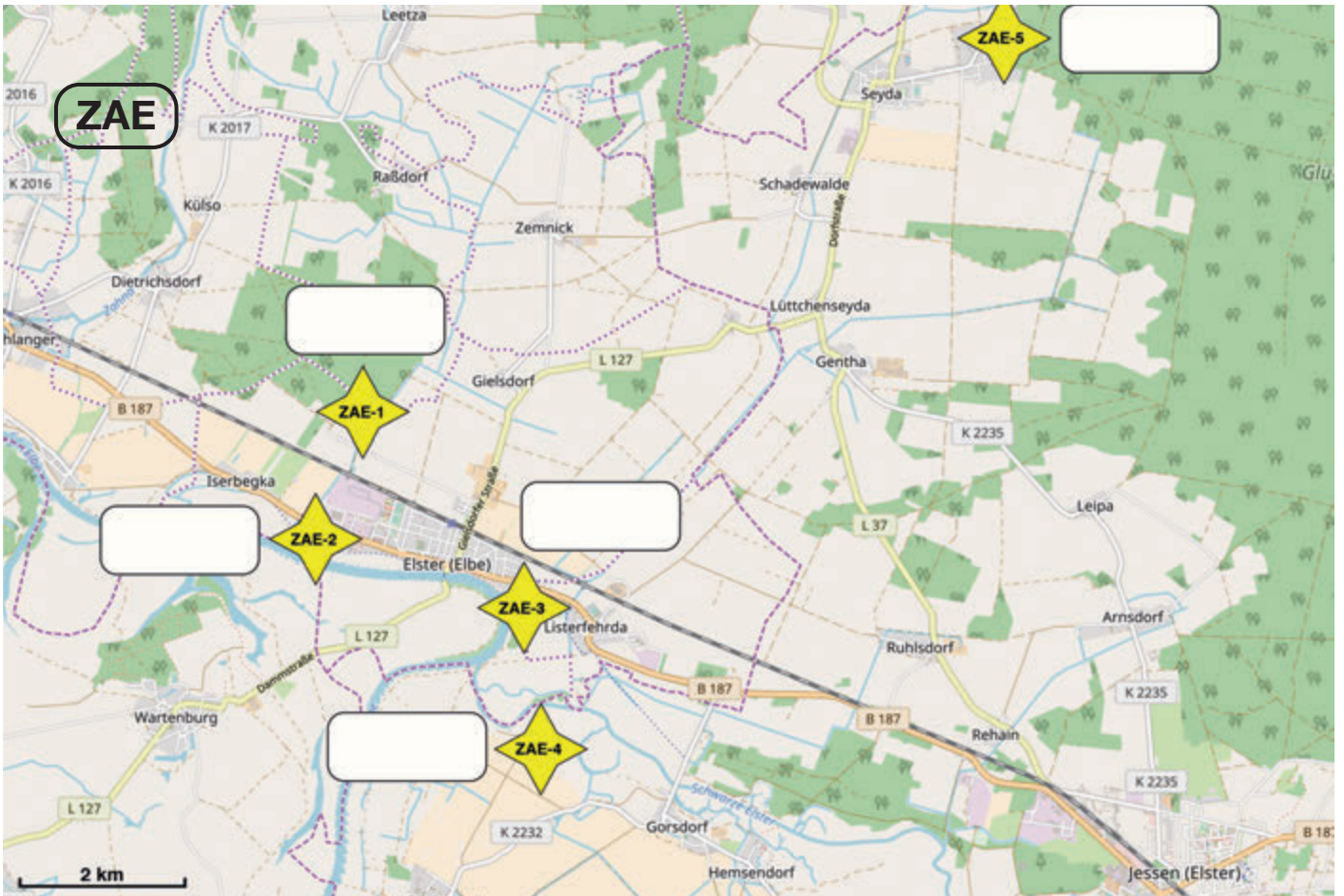
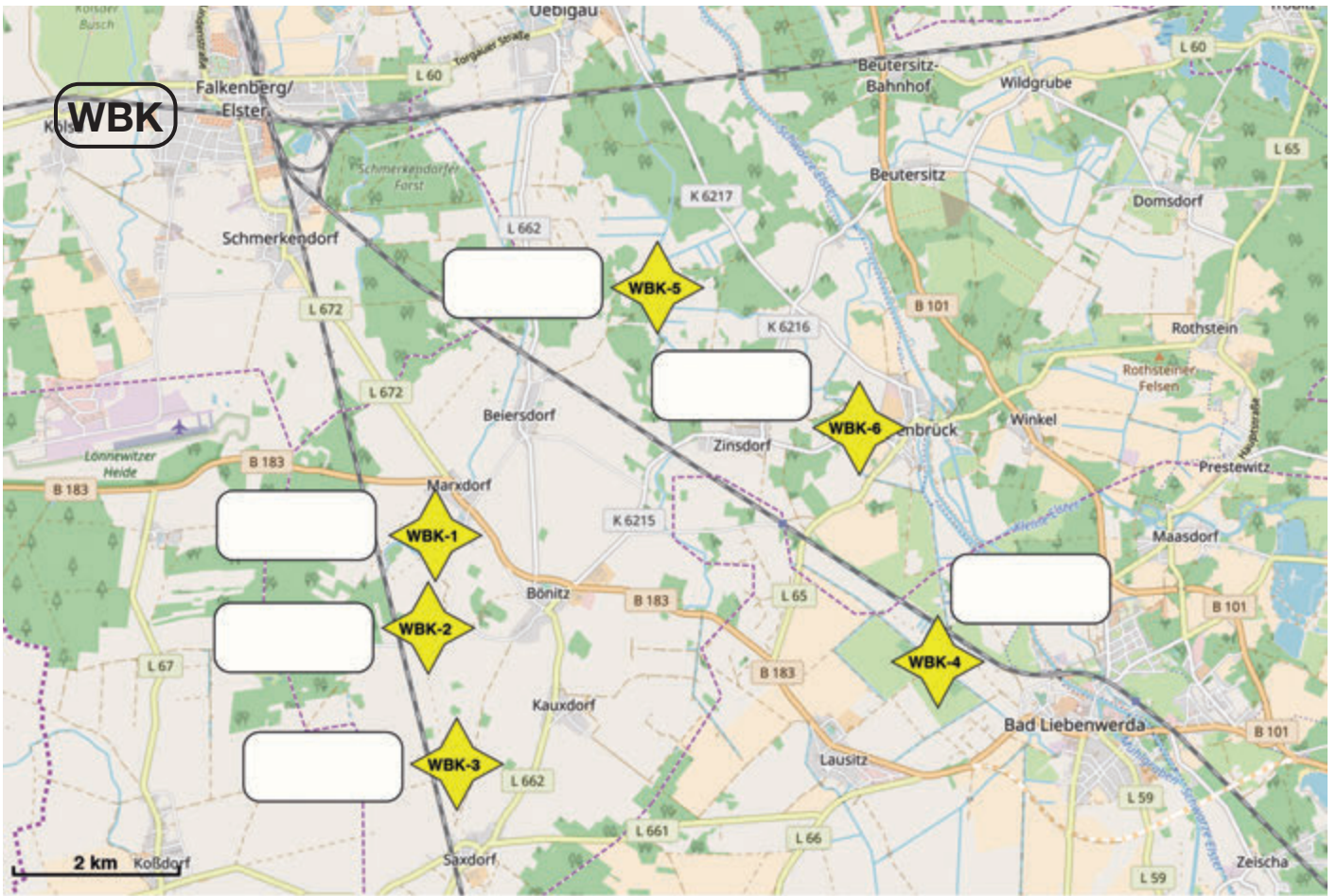


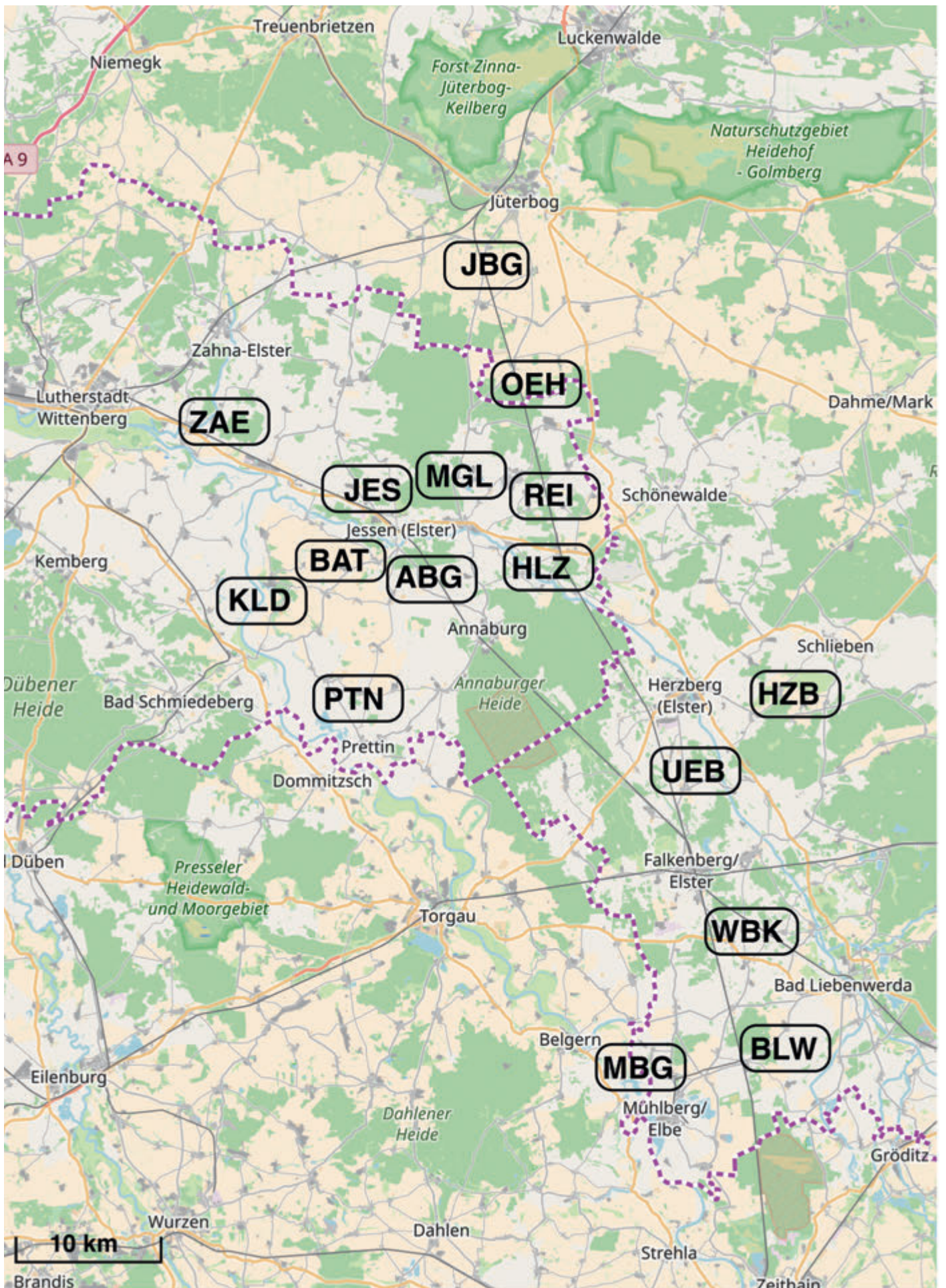








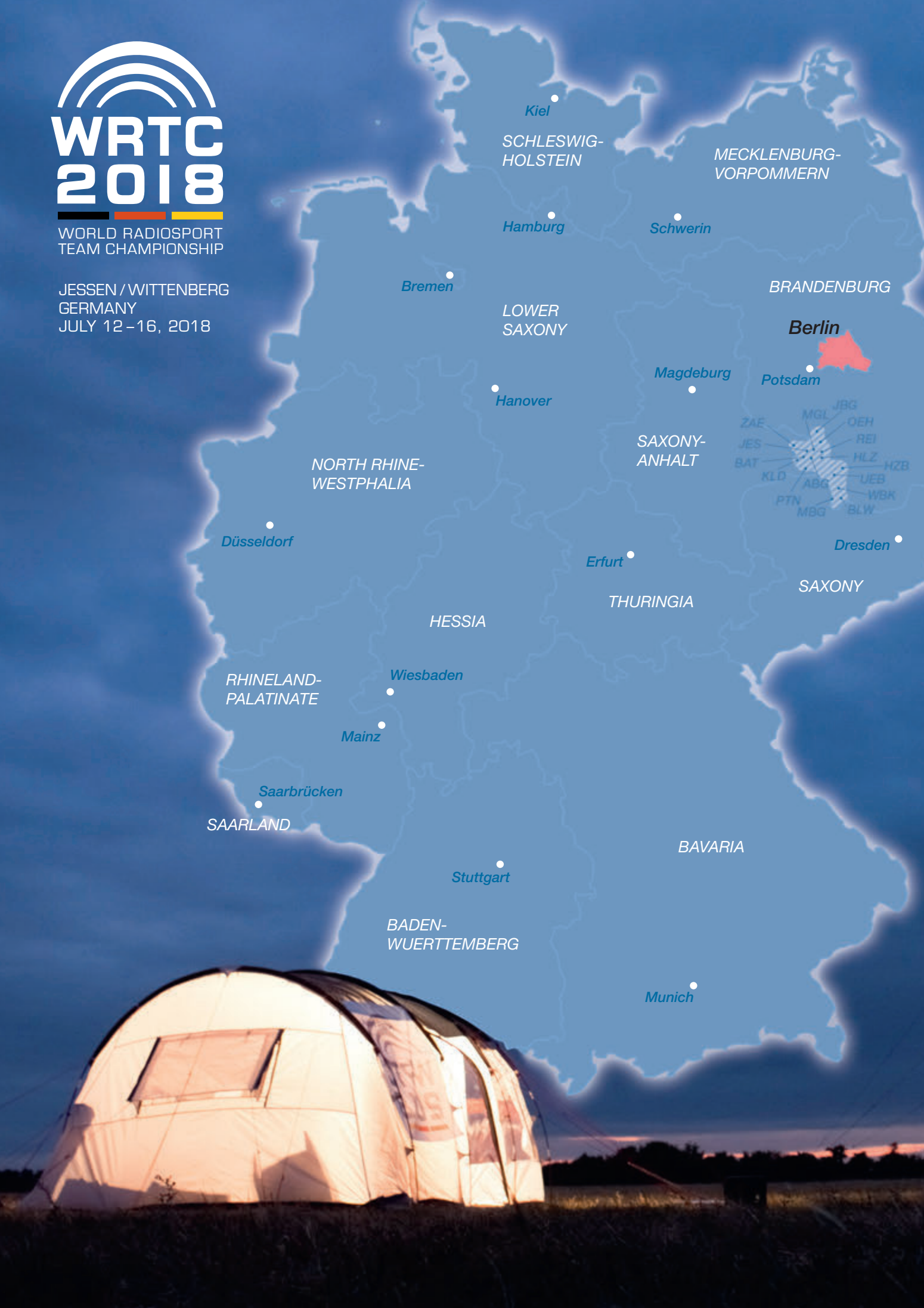




WRTC 2018

WORLD RADIOSPORT
TEAM CHAMPIONSHIP

JESSEN / WITTENBERG
GERMANY
JULY 12 - 16, 2018



Kiel

SCHLESWIG-
HOLSTEIN

MECKLENBURG-
VORPOMMERN

Hamburg

Schwerin

Bremen

LOWER
SAXONY

BRANDENBURG

Berlin

Hanover

Magdeburg

Potsdam

NORTH RHINE-
WESTPHALIA

SAXONY-
ANHALT



Düsseldorf

Erfurt

Dresden

HESSIA

THURINGIA

SAXONY

RHINELAND-
PALATINATE

Wiesbaden

Mainz

Saarbrücken

SAARLAND

HESSIA

THURINGIA

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