



## ECC Newsletter December 2015 – WRC-15 Special Edition

# WRC-15: a long and fruitful journey

With the signing of the final acts by representatives of 150 member states of the ITU, the WRC-15 ended on 27. November 2015. This process included over 3 years of preparation leading up to 4 weeks of intense negotiations that took place at WRC-15 in Geneva. The European Conference of Postal and Telecommunications Administrations (CEPT) were proactive during this period in the preparation of technical, operational and regulatory studies on all subjects on the agenda. It was also actively involved in furthering European spectrum interests through extensive discussions held during the Conference.

Looking back at the outcomes of the Conference, CEPT can be satisfied with the results and with the tremendous efforts it made towards achieving those results. Although it has been a long, challenging and, at times, frustrating process, the overall outcome has been successful for CEPT and an improved and more robust regulatory framework for spectrum use has been delivered

## A positive outcome for CEPT

With WRC-15 now concluded, it is now timely to consider some of the important results achieved at the Conference. A number of key decisions were taken during the four-week period and the results will certainly have a major impact and a positive effect on the future European environment for radiocommunications.

Some of the key achievements over the four weeks are:

- WRC-15 allocated and identified for IMT globally harmonized bands for the development of mobile broadband on a worldwide scale were allocated and identified while providing full protection from interference to other services currently operating in these bands. This decision now paves the way for offering mobile broadband at an affordable price in currently underserved areas and for bringing significant additional spectrum resources to areas where demand is already very high.
- Agreement was reached on the allocation of radio-frequency spectrum for global flight tracking in civil aviation for improved safety. This was achieved in an efficient and timely manner in order to meet the expectations and immediate needs of the global aviation community.
- Concerning the aeronautical sector, WRC-15 opened the way for the development by ICAO of worldwide standards for unmanned aircraft systems (UAS), and identified regulatory conditions for spectrum use, which marks a kick-off for the development of such systems to operate internationally. WRC-15 also agreed on spectrum for wireless avionics intra-communications, which allows the development of improved technical flight systems whilst enhancing fuel-efficiency due to lighter plane constructions.
- WRC-15 took decisions that will improve the quality and safety of automotive and maritime transports and, through earth stations in motion, will pave the way to provide global broadband connectivity for the transportation community.
- WRC-15 provided information about harmonized spectrum for mobile broadband communications for robust and reliable mission-critical emergency services for public protection and disaster relief.
- New allocations have been made for Earth-exploration satellite services with higher resolution radar imagery for improved global monitoring of the environment and climate.
- WRC-15 agreed some improvements to the regulatory provisions applicable to frequency assignments pertaining to satellite networks, in order to facilitate rational, efficient, and economical use of radio frequencies and any associated orbits.
- Almost all agenda items proposed by CEPT for WRC-19 were accepted and CEPT will take the initiative to start its work with respect to preparations for WRC-19 shortly.

More detailed information on the outcomes of WRC-15 in the form of an item-by-item analysis will follow in our [second article](#)

# A successful preparation and coordination process

CEPT established its Conference Preparatory Group (CPG) specifically for the purpose of preparing for WRC-15. The activities commenced in 2012 shortly after the end of WRC-12 and led to the adoption of 53 European Common Proposals (ECPs) for the work of the Conference, an impressive achievement given the broad range of topics under consideration. The ECPs were highly supported by CEPT administrations and most of them were formally co-signed by between 35 and 43 of the 48 CEPT countries.

As reported in our [January 2015 special edition](#), CEPT put emphasis on preparing for the future of mobile broadband. It is of the view that globally harmonised spectrum is vital to realising all the benefits of ICT, i.e. economies of scale, ease of roaming and bridging the digital divide.

During WRC-15, the coordination of CEPT administrations was ensured through very frequent Heads of Delegation meetings and additional coordination meetings for specific agenda items as necessary. This helped to ensure that CEPT positions developed before the Conference could be appropriately defended during the hundreds of meeting sessions held across the 4 weeks of the Conference. These frequent meetings also provided an opportunity to adapt CEPT positions, when appropriate, in order to reach satisfactory agreements on all the topics under consideration.

CEPT's preparedness and organisation before and during the Conference relied a lot on the coordination team, which consisted of a core team of around 35 participants who were appointed to lead the negotiations on all of the items on the WRC-15 agenda. The team demonstrated its discipline, flexibility, wisdom, negotiating skills and ability to find well balanced compromises in solving issues.

One of the key elements of the success of the Conference was the well-organised inter-regional coordination process which took place both during preparatory process (e.g. through mutual attendance to preparatory meetings) and during the conference itself. Closely following positions held by other regions and knowing their representatives gave CEPT an additional benefit in defending its interests as well as gave a good background in finding compromise solutions. As decisions on sensitive topics are often made during informal groups between representatives from the regional groups outside of the main meetings, these good working relationships proved to be critical.

## What's next?

The results of WRC-15 will now be analysed in detail by CEPT, and in particular its Electronic Communications Committee (ECC). The influence and impact of those results can then be considered in the context of the ECC's own work programme.

While, on some topics, the outcomes from WRC-15 can be considered as a worldwide transposition of existing European regulations (such as for IMT in the 700 MHz and in the 3.5 GHz band or for short range radars at 78 GHz), there are some areas where decisions from WRC-15 will have to be followed by appropriate actions towards new harmonisation measures relevant for Europe.

One of the key instruments for frequency managers and users of the radio spectrum in Europe is undoubtedly the [European Common Allocation \(ECA\)](#) table. The ECA delivers valuable information on the current use of the spectrum in Europe. A comprehensive review and update of the ECA will be conducted in 2016 in order to reflect the most recent changes in spectrum policy and use, including the impact of relevant decisions taken during WRC-15.

Other instruments within CEPT are ECC decisions and recommendations which are now to be developed or revised in light of the worldwide decisions. This work will be initiated by the ECC when all decisions in the 450 pages of the final acts have been thoroughly analysed.

Meanwhile the new cycle of WRC-19 has already been started and CEPT is invited to provide again expertise and ideas in the preparatory studies as many items of the new agenda are deriving from CEPT proposals. One of the main items of this agenda will certainly be “Spectrum for IMT above 6 GHz” under which frequency bands in the range above 24 GHz are being evaluated for worldwide harmonisation for 5G. More info about WRC-19 and its preparation will be in future releases of the ECC newsletters.

**Alexander Kühn, Chairman of the ECC's Conference Preparatory Group**

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# Summary of the outcome of WRC-15

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In this article, we've made a very short summary of the outcome of the Conference for each topic. You can see a more detailed report from each of the four weeks of the Conference at the CEPT web portal, Conference Preparatory Group (CPG) [home page](#).

## Results for mobile broadband

WRC-15 confirmed the primary mobile allocation and the IMT identification in the band 694-790 MHz band in Region 1 without additional constraints with respect to broadcasting other than the provisions included in the Geneva 06 Agreement. Read more details [here](#).

The Conference harmonised the frequency bands 3 400 - 3 600 MHz and 1 427 - 1 518 MHz for mobile broadband including, when appropriate, an IMT identification, on a large geographical scale, while keeping current regulatory status for Europe in the band 1 452 - 1 492 MHz. Although CEPT aimed at a larger harmonisation of the range 3 600 – 3 800 MHz, it had to realise that it was rather isolated with this proposal. Therefore maintaining the current situation kept the balance and supported the harmonisation of the 1 427 – 1 518 MHz band.

WRC-15 agreed to maintain the existing status of the band 470-694 MHz in Region 1 and to call for a review of the spectrum use of the frequency band 470-960 MHz at the WRC-23.

## Results for satellite communications

CEPT came to WRC-15 with a large number of proposals to improve satellite regulatory provisions and the waste majority of the principles portrayed in the European common proposals were approved by the Conference. CEPT thereby contributed to the improvement of a number of satellite coordination procedures applicable to frequency assignments pertaining to satellite networks, in particular clarifications of a number of regulatory provisions brought into force at the previous Conference. WRC-15 for example approved further clarifications to the ‘bringing into use’ and ‘suspension’ mechanisms of the Radio Regulations; the latter including penalties in case of late notification. These actions constitute a step forward towards a more transparent and efficient use of the scarce orbital and spectrum resources. In addition, several efficiencies to the process governing satellite coordination procedures were agreed by the Conference. Based on a CEPT proposal, a mechanism for

automatic generation of advance publication information for networks subject to coordination, was also approved by the Conference. An option to finally stop communicating with ITU by sending faxes was also agreed.

The Conference also clarified the applicability of the Radio Regulations to earth stations in motion operating in satellite services.

With regard to additional allocations to services for satellite communications, WRC-15 agreed on a primary allocation in Region 1 to the Fixed Satellite Service (FSS) (space-to-Earth) in the frequency band 13.40-13.65 GHz. A corresponding allocation for the FSS (Earth-to-space) in the frequency band 14.5-14.8 GHz was also agreed in a limited number of Region 1 countries with associated limitations.

WRC-15 also approved a new primary allocation to the maritime-mobile satellite service (space-to-Earth) in the 7 375-7 750 MHz band.

As supported by the CEPT and other regional organisations, no allocation was made to the mobile-satellite service in the range 22-26 GHz.

## Results for the scientific use of spectrum

The Conference agreed to an extension of the Earth Exploration Satellite Service (EESS) (active) allocation in the bands 9.2-9.3 and 9.9-10.4 GHz; and on a primary allocation in the band 7190-7250 MHz to EESS (Earth-to-space) based on a technical conditions proposed by the CEPT (read more about planned usage of EESS [here](#)).

WRC-15 also updated the conditions of use of the 410-420 MHz band for systems communicating in the proximity of orbiting manned space vehicles.

## Results for aeronautical, maritime and radiodetermination services

WRC-15 agreed on a primary allocation to the radiolocation service in the 77.5–78.0 GHz band for ground-based applications, including automotive radars with the associated technical and operational provisions, derived from the CEPT proposal.

In order to address the need of global flight tracking (GFT), a new primary allocation was made to the aeronautical mobile-satellite (R) service in the frequency band 1 087.7-1 092.3 MHz in order to enable the satellite reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft, transmitted in accordance with ICAO standards. This solution is fully in line with the CEPT position.

WRC-15 approved a worldwide primary allocation to the aeronautical mobile (route) service in the band 4200-4400 MHz to support Wireless Avionics Intra-Communications (WAIC).

For the control and non-payload communication (CNPC) links for unmanned aircraft systems (UAS), WRC-15 made a provisional footnote allocation in a number of FSS bands. ICAO is invited to start developing the necessary standard and recommended practices. The provisional allocation will come into force after the WRC-19 approval of technical conditions of CNPC links usage of those bands.

The Conference adopted appropriate provisions to promote a more efficient usage of the existing spectrum for on-board communication stations in the maritime mobile service and to foster the VHF Data Exchange System (VDES) to enhance while protecting the existing Automatic Identification system (AIS). Consideration of the satellite component for VDES has been postponed to WRC-19.

## Other topics

Concerning the feasibility of achieving a continuous reference time-scale, WRC-15 agreed a framework for further study including wider collaboration with relevant international bodies such as the International Bureau of Weights and Measures (BIPM), International Committee for Weights and Measures (CIPM) and General Conference on Weights and Measures (CGPM).

WRC-15 also agreed to encourage administrations, on a worldwide basis, to consider parts of the frequency range 694-894 MHz in their national planning for broadband Public Protection and Disaster Relief (PPDR) applications.

## Agenda of the next Conference

One of the most debated topics during the Conference was the development of the agenda for WRC-19. This item was a huge success for the CEPT as most of the European proposals were included into the next Conference agenda.

The following are some of the important agenda items which will be addressed at the 2019 conference:

WRC-19 will consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service. The approved Resolution focusses on specific frequency bands, as proposed by CEPT, and does not include bands around 6-20 GHz and 27.5-29.5 GHz.

WRC-19 will consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5 150 MHz and 5 925 MHz to accommodate for possible mitigation techniques if any.

In order to accommodate evolving Global Flight Tracking applications, WRC-15 approved an agenda item for WRC-19 aiming at considering regulatory actions for the development and implementation of the Global Aeronautical Distress and Safety System (GADSS).

WRC-15 also approved an agenda item, proposed by CEPT, for WRC-19 to address spectrum needs for telemetry, tracking and command to accommodate the growing number of satellites with short mission duration.

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