ANNUAL REPORT 2019



SUPPORT COMMUNICATION TECHNOLOGY



Our mission

The European Communications Office (ECO) is the permanent office of the European Conference of Postal and Telecommunications Administrations (CEPT), an organisation where policymakers and regulators from 48 European countries co-operate and contribute to developing more vibrant and dynamic markets for electronic communications and postal services.

The ECO provides expert advice and administrative support to CEPT to help it to develop and deliver its policies and decisions effectively and transparently.

The Office is a European centre of expertise in electronic communications providing a platform for CEPT member countries and concerned stakeholders to discuss, debate and collaborate on advancing European communications policy for the benefit of all Europe's citizens.

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Chairperson's Foreword

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It is 10 years since the European Communications Office (ECO) published its first Annual Report. In his address to CEPT members back in 2009, ECO's then chairman, Chris van der Diepenbeek, wrote that the Office "took the decision to do so to improve understanding of ECO's work and to provide greater transparency". A decade on, I hope, and believe, we have achieved that goal.

The following pages will provide lots of detail on exactly what the Office has been doing in the past year, from providing specialist support and holding nearly 100 meetings within CEPT's Committees to organising impactful workshops and ably supporting CEPT and ECC at the World Radiocommunication Conference (WRC-19). The team actively participated in almost every ECC meeting, our experts helped prepare, and submitted, contributions to those meetings and had a real bearing on bringing ECC Deliverables to the table.

Communication is ever important in discovering the requirements and wants of all of CEPT's stakeholders, and once again the team conducted questionnaires and public consultations throughout the year. For outward information provision, there were published bulletins and newsletters and the ECO Documentation Database, the ECC Work Programme Database, SEAMCAT and EFIS were all improved and updated again this year.

Offline, face-to-face meetings continue to be the most powerful way of networking, communicating and achieving consensus, and I'd like to take this opportunity to congratulate the team on hosting 27 successful meetings throughout the year. However, the ECO Council started, nearly one year ago, addressing the climate emergency declared by the EU and the need to start partially reducing some of our physical/ face-to-face Council meetings, replacing them whenever possible by web meetings. The Office has installed new audiovisual facilities for improved remote participation in meetings hosted at the ECO and our GoToMeeting platform was also upgraded and can now accommodate up to six simultaneous web meetings.

It had been many years since the ECO's Copenhagen offices were upgraded and any visitors to the building in the past few months would have noticed some impressive changes. A worthwhile investment in both technology and furniture means that the audio-visual equipment is better, the layout is much improved and a larger number of participants can be accommodated in meetings going forward. CEPT Committees and the ECO are also committed to improving efficiency.

I have now been Chairperson of this organisation for more than four years and I am continuously impressed by the work and dedication of each member of the team. It's worth pointing out again that it is small, with 12 staff, but its impact is felt across all CEPT Committees and the communications sector.

In 2019, 35 countries were officially Contracting Parties to the ECO Convention while 36 countries contributed to the financing of the ECO. We have entered discussions with some of the CEPT Administrations who are not currently members of the ECO Council in the hope that more of you will sign the ECO Convention.

As we enter into the Twenties, the coming decade will undoubtedly place challenges in our path. Communications technology will play a key role in meeting those challenges. The ECO looks forward to playing its part in the continued improvement of Europe's communications services.

Nerde

Marta Leandro Chairperson of the ECO Council



Director's Statement

There is a quote from Pele, one of the most famous football players ever, which starts: "Success is no accident. It is hard work..." Those words sprung to my mind after the recent fourweek World Radiocommunication Conference (WRC-19), which was held in Egypt in October and November. For the first time the ECO sent two dedicated spectrum experts to the conference for its duration, and the feedback from attendees has been hugely positive.

A lot of hard work went into the preparations of WRC-19, long before the event ever took place – they started shortly after WRC-15, with the Office supporting the ECC Conference Preparatory Group (CPG). But it was over the course of the four weeks that our experts, Doriana Guiducci and Peter Faris, really played an essential role, assisting European delegations on important issues, supporting the CPG Chairman, providing office space, acting as a focal point between CEPT and other regional organisations and working alongside the CPG to prepare and publish weekly reports. Nearly 400 CEPT delegates signed up to the ECO's chat system, which was available on smartphones. Our experts did an outstanding job and preparations are already under way for the WRC-23.

This is just one indication of the hard work carried out by the ECO team in 2019. Among the many achievements during the year were the public workshops they organised. For example, in May, we organised a two-day thematic workshop on new spectrum solutions for industry sectors. More than 150 people, including radio industry and regulatory experts, attended the event in Copenhagen, which had a packed agenda that included 38 speakers. Throughout the year, the Office also attended a range of conferences and workshops, to which we made valuable contributions, delivering presentations on thematic topics and promoting the work of the CEPT on related matters. 5

This year, we also started the process of developing the ECC Strategic Plan for 2020-2025, as the current strategic plan, 2015-2020, concludes. The Office has always played a central role in helping the ECC to implement and fulfil its plans, offering specialist support, newsletters, organising workshops and increasing the ECC's visibility. It has been enjoyable stocktaking our achievements for the past five years, examining the ECC's accomplishments during that time, as well as looking forward and discussing what the new objectives will be. We look forward to offering our continued assistance.

We had two new additions to the team in 2019, as we welcomed Jaime Afonso, our expert on frequency management, who joined in March from Portugal, and Zeljko Tabakovic from Croatia, our spectrum engineering expert, who came on board in August. We said goodbye to José Carrascosa and I'd like to thank him for his time at the ECO. Both Jaime and Zeljko have hit the ground running and have been valuable additions to our hardworking Office.

I am proud of the work the entire team continues to do. In this ever-changing world of communications, their commitment is constant. I hope the following pages provide an insight into their achievements and contributions to the world of communications.

Pormo fenter

Per Christensen Director of the ECO

The ECO: our role, our team

Our role

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The European Communications Office (ECO) provides expert advice and administrative support to CEPT and its three committees. We help CEPT to develop and deliver its policies and decisions effectively and transparently. Our duties are threefold: to provide a European centre of expertise in electronic communications; to support and contribute to the work of the three CEPT Committees; and to manage CEPT's day-to-day activities. We also have a core objective of maximising the effectiveness of CEPT's Electronic Communications Committee (ECC).

The primary objective of the ECC is to enable the efficient, effective and harmonised use of the radio spectrum, satellite orbits and numbering resources across Europe. To achieve its mission, the ECC develops common policies and regulations for Europe in the field of electronic communications, taking into account European and international legislation, and prepares European common proposals to represent European interests in international organisations, especially in the International Telecommunications Union (ITU).

The ECO supports the ECC by:

- providing a platform based on trust and openness to improve collaboration across its membership and extending its reach beyond Europe;
- ensuring its communications are transparent, consistent and effective;
- delivering new initiatives and providing strategic input to its work; and
- supporting CEPT's bottom-up approach to policy development by consensus.

We help CEPT to develop and deliver its policies and decisions effectively and transparently

We work effectively as a team and we strive to identify new and innovative ways to maximise our impact and value to CEPT



Meet the ECO team

The ECO team comprises 12 persons based at its offices in Copenhagen, Denmark.

The team includes the Director, six experts in the field of electronic communications – recruited internationally from across Europe - and five experienced team members from Denmark with responsibility for facilities management, IT, finance, human resources and general day-to-day administrative support to CEPT and its three committees.

Together, our team have the expertise and experience necessary to deliver the specialist services required of the ECO. We work effectively as a team and we strive to identify new and innovative ways to maximise our impact and value to CEPT.



Per Christensen Director, Denmark



Freddie McBride Deputy Director, Ireland (Numbering and Networks, Com-ITU)



Peter Faris Ireland (Spectrum Engineering, Frequency Management, Mobile Broadband)



Doriana Guiducci Italy (Spectrum Engineering, Frequency Management, WRC preparation, liaison with academia and research bodies)



Robin Donoghue United Kingdom (Frequency Management, EFIS Management)



laime Afonso Portugal (Frequency Management, Com-ITU, EC co-ordination, ETSI co-ordination) – joined the ECO in March 2019



Zeljko Tabakovic Croatia (Spectrum Engineering, SEAMCAT, Frequency Management, Broadcasting Plan Management) joined the ECO in August 2019



Susanne Have Denmark (CEPT, ECO Council, CERP, SAT MoU, Administration)



Vibeke Hansen Denmark (Webmaster, Reception, Premises, Meetings, Administration)



Mette Tobiassen Denmark (Finance, Human Resources, Projects)



Anne-Dorthe Hjelm Christensen Denmark (Public consultations, ECO Documentation Database, EFIS, Administration)



Kenneth Karlsson Denmark (IT support and development, Technical enquiries, Projects)

Spain (Spectrum Engineering, SEAMCAT, Broadcasting Plan Management) – left the ECO in June 2019

Adapting to life in Denmark as an ECO employee

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In a 2017 article for news outlet CNN, the late chef and travel writer Anthony Bourdain listed 10 things everyone should know about Copenhagen. The Danes are the happiest people on Earth, he said. That particular statistic was taken from the UN's 2013 World Happiness report. He also pointed out that many people from Copenhagen cycle; Denmark doesn't have the Euro, Copenhagen has a number of Michelin star restaurants; Hygge, or cosiness is highly sought after; the city is "rich with design-led stores", and that Copenhagen places a strong emphasis on the environment. Other highlights, he said, were the Tivoli – the world's second oldest amusement park – and Copenhagen's special atmosphere at Christmas and New Year.

The internationally-recruited experts at the ECO would certainly agree with many, if not all of Mr Bourdain's observations. They may add Smørrebrød, an open sandwich, or Flødeboller, a chocolatecovered marshmallow, to the list. Many of them are what make Copenhagen, a city with about 600 000 people, a special place in which to live.

Of course, moving from any country is a life-changing event, an emotional rollercoaster, filled with fear, worry and excitement. Our experts will work with the ECO for a term of four years or a maximum of two terms, which will bring them up to eight years at the Office. Adapting to a new culture and way of life can be challenging. There are pluses, however, one of which is that most Danes speak English.

New recruits coming from abroad can expect some assistance from the Office before they even arrive in Denmark. Members of the administrative staff will work closely with them to help arrange transport, shipping and rental accommodation. They will work with them to identify suitable accommodation and schools, if necessary. Copenhagen has a number of good international schools.

Upon arrival, the new recruit will be provided with information on everything from public transport and cycling etiquette, to information about services, and even the best museums and restaurants to visit. The new expert will be joining a team of people who have been where they once were, so there will be no shortage of advice.

On a day-to-day level, working at the ECO will require a different approach from previous jobs. The majority of our experts come from roles within CEPT Administrations and are no strangers to the meetings of CEPT and its constituent groups. However, at the ECO they must approach those meetings very differently. They will no longer be a national representative but will be there as a member from the ECO to contribute and support the work of the group's members. An objective perspective on both the decisions on the approval of deliverables and on the direction of the work will be a must. Adopting that neutral position may seem like a difficult task but it is something that ECO experts adapt to quite quickly.

The ECO expert provides assistance to group Chairs, and advises and supports the groups on their activities during and after meetings. In doing so, we gain a unique insight into the work of the groups. We often conduct drafting activities and provide objective guidance on resolving specific issues, we take the lead in ensuring that the timescales set for particular work items are met and we help the Chairman in driving work programmes forward.

Working at the ECO is a multifaceted experience – its location, the people in the office and the work itself make it a gratifying and pleasant experience. As ECO experts can only work for a maximum of eight years in their roles, vacancies in the office arise regularly. If fine food and good design appeal, then you make sure you apply.

Expert positions at the ECO are advertised at https://www.cept.org/eco/





Supporting CEPT 10

The ECO provides a secretariat for CEPT (including its Presidency) and its three autonomous business committees.



European Conference of Postal and Telecommunications Administrations 48 European countries cooperating to regulate posts, adio spectrum and communications networks

Our structure



CEPT has a Co-Presidency comprising the chairmen of the three committees.



represent European interests in international

organisations, especially in the ITU.

Mr Chris Woolford, UK, is Chairman

of the ECC.

The ECC develops common policies and The European Committee for Postal regulations for Europe in the field of electronic communications and related and preparation for meetings of the applications and prepares European positions and common proposals to Universal Postal Union (UPU).

> Mr Germán Vázquez, Spain, is Chairman of CERP.

The CEPT Co-Presidency co-ordinates the activities of the three business committees in order to contribute to developing more vibrant and dynamic markets for electronic communications and postal services - for the social and economic benefit of all Europe's citizens.

As the permanent office of CEPT, the ECO supports the Presidency as follows:

- 1) It handles day-to-day correspondence to and from the Presidency, with some secretarial and advisory support for co-ordination between the co-Presidents;
- 2) It provides and maintains content for the different sections of the CEPT web portal that relate to the Presidency and CEPT as a parent organisation for its three committees;
- 3) It prepares reports to the membership on the activities of the Presidency and provides advice and assistance to the individual committee Chairs where appropriate;
- 4) It collects CEPT member financial contributions, used to pay for the ECO's support and external expenditure as required, namely the costs of CEPT Assemblies, and some of the facilities provided for CEPT delegations at international conferences; and
- 5) It makes logistical arrangements and provides secretariat support for CEPT Assemblies as required.

The CEPT Assembly is the supreme body of the organisation, and is convened as required. There was no need to call for an Assembly meeting in 2019.





Regulation (CERP) is responsible for postal regulation, as well as European coordination

The Committee for ITU Policy (Com-ITU) is responsible for European coordination and preparation for meetings of the ITU.

Ms Cristiana Flutur, Romania, is Chairwoman of Com-ITU.

¹² In brief

2019

Our experts actively contributed to 97 physical meetings within the CEPT's committees: 276 person-days shared between our international team

Almost **400 CEPT delegates** registered to our messaging/chat system designed to support CEPT co-ordination during WRC-19

> We continued to strengthen collaboration with the academic world involved in research on spectrum issues

We supported CEPT/ECC at the World Radiocommunication Conference (WRC-19) with two dedicated spectrum experts onsite in Egypt providing co-ordination assistance for the duration of the four work

for the duration of the four-week conference

> We released v5.3.1 of SEAMCAT, which included important improvements and new features for simulating 5G (IMT-2020) systems

In 2019, **36 countries** contributed to the financing of the ECO



We carried out **40 public consultations**, which were used to inform the substance of new or revised ECC Deliverables. The office analysed and processed **227 responses** to them



We hosted **27 meet** across **53 day**s, a **more than 570 p**a to our offices in Co

The ECO team organised **192 web meetings** to support of CEPT Committees, with over **1300 delegates** register participation in these meetings

We published 3 ECC newsletters including a special edition outcomes of WRC-19, containing 8 specific articles on specific numbering management topics, all authored by ECO e

DocDB received over 193 000 page views from around the world. Of our over 700 ECC Deliverables in force, over 40 000 copies were downloaded from DocDB

The ECO created and managed **17 questionnaires** and processed **463 individual responses** in total in order to fully inform the work of the ECC

The CEPT portal, n by the ECO, had **1.3 million page**



We **expanded our meeting room capacity** at the ECO and upgraded our audio/visual infrastructure to enhance our services to our customers

We participated in meetings and events outside of the CEPT framework, **promoting our deliverables** and the positions agreed within the committees

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| the work ering for | The ECO organised a thematic workshop on "New Spectrum Solutions for Industry Sectors" and one induction workshop | |
| on on the ctrum and experts | on "European Spectrum Management and Numbering" aimed at newcomers to the work of the CEPT/ECC | |
| | Arrange Conference of Procedures and | |
| nanaged almost e views | Image: Section 2 Image: Section 2 </td <td></td> | |
| | WELCOME TO THE CEPT PORTAL The COPT portial designed to make It an easy as possible for you to see noy our compare. Used or mode. The potal hoals he have establish of the bodies which constitute the COPT lempt, CEPT, is three boardes committees (CC) Constitution Constitution of the respective organizations | developed aroun ignoups. re invited to creat al. This allows yo |

SECTION TWO

We aim to maximise the ECC's overall **effectiveness** by providing first-class administrative **support**, **regulatory** and **technical expertise** and a range of specialist support services.

2.1 Providing specialist support to the CEPT Committees

One of the ECO's core duties is to actively contribute to the work of the CEPT Committees, in particular the ECC. We aim to maximise the ECC's overall effectiveness by providing first-class administrative support, regulatory and technical expertise and a range of specialist support services.

Our work in supporting the CEPT Committees is manifold. In 2019 we:

- Participated in and actively contributed to Working Groups and Project Teams right across the ECC;
- Promoted the ECC's deliverables externally and helped advance topics of interest internally;
- Provided expert support to the ECC's Conference Preparatory Group (CPG) and its Project Teams in preparation for WRC-19, and provided two dedicated spectrum experts for onsite co-ordination and support for the duration of the four-week conference in Egypt;
- Assisted the CERP chairman with the development and distribution of the CERP newsletter, managed the meeting schedule and maintained the content on the CERP web page.
- Continued to upgrade and improve our tools and services such as SEAMCAT and EFIS, the ECO Frequency Information System;
- Provided guidance on rules of procedure and working methods for each of the committees when required;
- Conducted public consultations and questionnaires on behalf of CEPT Committees to fully inform their work; and
- Provided a central source for specialist information.

Contributing to the improvement of ECC's efficiency and its working processes

ECO experts strive to have a positive impact on the ECC's activities through their continuous work as embedded members of various Working Groups and Project Teams. Our team members participate as recognised observers in almost every meeting of the ECC and its many subordinate groups. We assist in the preparation and management of the meetings and the necessary follow-up work.

In 2019, we participated in 89 physical meetings within the ECC, the equivalent of 253 person-days shared mainly between the six international experts from our team, plus the Director. We also sent two spectrum experts to the WRC-19 in Sharm El-Sheikh, Egypt to support the CEPT effort.

Our continued presence and active participation in these meetings demonstrate our important role in striving to continuously improve the ECC's efficiency, the effectiveness of its working processes and, ultimately, the quality of its deliverables.

Structure of ECC – December 2019



16 Supporting CEPT at WRC-19



The ITU World Radiocommunication Conference 2019 (WRC-19) took place in Sharm El-Sheikh, Egypt, over four weeks from 28 October to 22 November 2019. The conference was attended by over 3 400 delegates from 163 ITU member states and 129 observer organisations. Some 780 delegates from 46 CEPT administrations participated. The conference is held every four years and makes key decisions on changes to the ITU Radio Regulations to determine frequency and satellite orbit usage for the future.

Preparations for WRC-19 began shortly after WRC-15. The ECC's Conference Preparatory Group (CPG), supported by the office, worked tirelessly during the intervening period on technical, operational and regulatory studies to prepare European common proposals for all items on the WRC-19 agenda.



During the four weeks of WRC-19, the office played a vital role on the ground in Egypt. Two of our spectrum experts, Doriana Guiducci and Peter Faris, provided support and assistance to the European delegations on substantive issues related to the agenda. Our experts also supported the CPG chairman and the co-ordination team on practical arrangements for CEPT co-ordination meetings and the usage of meeting facilities at the Conference. ECO also provided an office space at the meeting venue to assist CEPT coordination. The office acted as focal point between CEPT and the other regional organisations and provided a contact point between the CEPT co-ordination team and the national delegations.

In collaboration with the CPG chairman and the co-ordination team, our experts prepared and published weekly reports from the Conference which kept our members updated on the progress achieved each week. Along with the weekly reports, our experts published news items on progress, particularly on issues of interest to the European region. The office invested a significant amount of time and resources to provide electronic tools for CEPT coordination. This includes the improvement and maintenance of a chat application, available also on mobiles, to facilitate the co-ordination process before and during the Conference.

The chat application enabled real-time discussions between CEPT delegates following various issues in the different committee meetings and proved a useful tool for informal communication between CEPT delegates. The chat tool received broadly positive feedback and it will be made available to members of CEPT's Committee for ITU Policy (Com-ITU) in 2020 for the World Telecommunication Standardisation Assembly which takes place in Hyderabad, India (17-27 November 2020).



The ECO's participation in a group is driven by its objective to achieve positive outcomes through constructive engagement and by providing contributions to further the group's work, in particular, during the development of ECC Deliverables and the definition of CEPT common positions.

We help prepare and submit contributions to meetings in areas where our expertise is both beneficial and relevant to the work. As described in subsequent sections, our experts analyse the responses from public consultations and from questionnaires, a task that is essential as an evidence-based approach to fully inform the development of ECC Deliverables. Our bespoke tools, such as EFIS and SEAMCAT, facilitate the research and analysis that is required to provide sound reasoning and justification for the ECC's policy work. With EFIS, we contribute to ECC activities by analysing spectrum usage and related information. With SEAMCAT, we carry out detailed compatibility and sharing studies.

Our bespoke tools, such as EFIS and SEAMCAT, facilitate the research and analysis that is required to provide sound reasoning and justification for the ECC's policy work

As a result of our involvement in the full range of ECC activities and our important co-ordination role, we also contribute to fostering co-operation between different groups on topics of mutual interest. This is an integral role for us in order to increase efficiency and consistency within the ECC and to avoid duplication of effort across different groups.

When meetings are in progress, our primary role is to provide assistance to the Chairmen and to advise and support the groups in their activities. Our central position and objective perspective give us unique insights on the groups' work and often lead us to conduct drafting activities and to provide guidance on resolving specific issues.

When a meeting ends, our support continues. We editorialise and process draft deliverables, as well as developing summaries of meeting outcomes for publication on the ECC web page.

In 2019, we actively contributed to the vast majority of ECC work items which led to new deliverables. Occasionally, the ECO is invited to provide a Chairman for a Project Team or a Forum Group. Our leadership is called upon particularly in cases where we have been playing a central role in the related topic.

Peter and Doriana at WRC-19

ECO alumni at WRC-19

In this context, our spectrum expert Zeljko Tabakovic chairs the Project Team STG, responsible for the development of the CEPT compatibility tool, SEAMCAT, within the Working Group Spectrum Engineering (WG SE). Zeljko was appointed chairman of STG in October 2019.

Our central position and objective perspective give us unique insights on the groups' work and often lead us to conduct drafting activities and to provide guidance on resolving specific issues

Supporting the ECC on procedural matters and working arrangements

The ECO plays a central role in the ECC's overall governance, in particular on matters related to rules of procedure and working methods. ECO experts develop and maintain an in-depth understanding of these fundamental documents. We are often called upon to clarify various articles and provisions by members on issues such as the principles for appointment of Chairmen and Vice-Chairmen and participation of observers in meetings. The Office also endeavours to ensure that the ECC is driven by a consistent set of rules, that its working arrangements are efficient and that it makes the best use of electronic means as appropriate.

The office maintains a set of co-operation agreements – Memoranda of Understanding (MoU) and Letters of Understanding (LoU) – between the ECC and its external partners. The office has a standing objective to assist the ECC in identifying possible future LoU partners.

In 2019, a new LoU was signed between the ECC and the Ultra Wide Band Alliance (UWBA), an international association established in 2018 to promote large-scale deployments of UWB technology and protect the millions of installed devices globally from encroaching radio technologies and to provide a forum for collaboration.



Conducting questionnaires – promoting a fullyinformed approach to policy development

Questionnaires are an integral part of ensuring an evidencebased and fully informed approach to policy development within the framework of the three CEPT Committees: ECC, Com-ITU and CERP. These questionnaires are generally used to gather preliminary information from administrations and other stakeholders to improve the development of deliverables and to identify relevant technical, regulatory and market trends.

The ECO assists the relevant groups in the development of the questionnaires, acts as a contact point to release them and collects the corresponding responses. In most cases, the ECO also processes the information collected through the questionnaires, and analyses and summarises the responses. Those responses are then considered by the responsible group in order to decide how to best utilise the information. Questionnaires can also be initiated by national administrations seeking to benefit from the experiences of colleagues in other countries on certain topics.

In 2019, the ECO managed 17 questionnaires to CEPT Administrations on behalf of ECC groups and national administrations. The questionnaires addressed a wide range of topics in the spectrum and numbering management areas, and the ECO processed 463 responses in total. All of these questionnaires were managed using the ECO's online questionnaire tool which has been available on the CEPT portal since 2013. The tool facilitates the distribution of the questionnaires and collates the responses received, which makes the task of analysing the results much more efficient. We now have the results of over 140 questionnaires stored in our systems. This is a valuable repository of information and a first point of reference for CEPT Administrations when considering a new policy proposal or work item.

In 2019, the ECO made some significant improvements to the questionnaire tool. The new features include a more user-friendly interface which allows easy sorting, filtering and searching of the existing questionnaires and their corresponding results. The collation of responses has also been improved and modified to conform with our GDPR policies. The improvements also resolved some known bugs notified to us by our user community.

| Questionnaires managed by the ECO in 2019 | Replies received |
|--|------------------|
| Electronic questionnaires triggered by ECC groups | |
| Questionnaire to the CEPT Administration on PSAP Callback - End-to-end connectivity test for eCall - follow-up questionnaire | 6 |
| Questionnaire to the CEPT Administration on SIM-less calls to 112 | 23 |
| Questionnaire to CEPT Administrations on the current and future usage of the 2290-2400 MHz range | 29 |
| Questionnaire to the CEPT Administration on PSAP Callback - End-to-end connectivity test for eCall | 42 |
| Questionnaire to CEPT Administrations on Interference statistics 2018 | 34 |
| Questionnaire to CEPT Administrations on Implementation Status of WG NaN-related ECC Deliverables - 2019 | 20 |
| Questionnaire to the CEPT Administration on Defining and Calculating Free Space in Cable Ducts | 18 |
| Electronic questionnaires conducted on behalf of CERP | |
| Questionnaire on the CERP Rules of Procedure | 20 |
| Electronic questionnaires conducted on behalf of Com-ITU | |
| Informing Europe's preparations for WTSA-20 | 25 |
| Electronic questionnaires triggered by ECO | |
| Future ECO IT Platform | 118 |
| Electronic questionnaires on numbering and network matters triggered by national administrations | |
| Lithuania Questionnaire: Spear Phishing using SMS | 11 |
| Austria Questionnaire: Centralised Number Portability Database | 20 |
| Slovenia Questionnaire: Revoking assigned numbers in blocks | 28 |
| Denmark Questionnaire: Lock-in effects in a M2M-scenario | 21 |
| Belgium Questionnaire: Sub-assignment of E.212 numbering resources | 21 |
| Russian Federation Questionnaire - Portability of Freephone Numbers | 11 |
| Portugal Questionnaire: The use of mobile numbers at fixed access (e.g. primary rate interface) | 16 |
| Total Responses | 463 |

Developing the SEAMCAT spectrum analysis tool

SEAMCAT in brief

The Spectrum Engineering Advanced Monte Carlo Analysis Tool (SEAMCAT) is an open source and free-of-charge software tool developed and maintained by the ECO, in co-operation with the SEAMCAT Technical Group (STG), a project team of the ECC Working Group Spectrum Engineering (WG SE). It is based on Monte Carlo simulation methods, a subset of computational algorithms. The algorithms use the process of repeated random sampling of parameters, which can vary and are therefore modelled as random variables. This permits statistical modelling of different scenarios for the coexistence of wireless communications systems. SEAMCAT has been developed to deal with diverse complex spectrum engineering and wireless compatibility situations.

SEAMCAT has been developed to deal with diverse complex spectrum engineering and wireless compatibility situations

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SEAMCAT can assess the potential interference between different radiocommunication systems that operate in shared, overlapping or adjacent frequency bands. It can also evaluate radio equipment parameters, taking into account all interference mechanisms. It is a system-oriented tool, which allows the user to build customised libraries – such as radio systems, antennas, spectrum masks, propagation models etc. – or to use those provided by other stakeholders to ease the effort of building complete scenarios for investigation. SEAMCAT is distributed with a predefined set of libraries that are at the user's disposal any time there are studies to perform. It is possible to join the SEAMCAT community to

Interested in joining the SEAMCAT Development Community?

contribute to the development of the software and its libraries.

More information at: https://seamcat.cept.org

SEAMCAT

Spectrum Engineering Advanced Monte Carlo Analysis Tool

The tool is updated on a regular basis and is downloadable free of charge at: https://seamcat.cept.org

Development of SEAMCAT continued in 2019 with version v5.3.1 released on 18 November. As ever, the latest improvements aim to respond to the overarching objectives for SEAMCAT development: to achieve increased flexibility, reliability, user-friendliness and faster and more efficient computational speeds. This latest version includes corrections to the antenna patterns, resolves some issues related to antenna tilt on interference link, and streamlines the code for use of the OFDMA UL/DL model as a system plugin. The next test version will be released in Q1 2020 and will introduce several new features including a tool to compare workspaces.



As well as maintaining and developing SEAMCAT, the ECO continues to raise awareness of the tool. SEAMCAT has been introduced in workshops, conferences and publications, as detailed in other sections. The following timeline presents the main activities related to SEAMCAT during 2019:

| February | Release of SEAMCAT v5.3.0 Beta 2 |
|----------|--|
| March | Release of SEAMCAT v5.3.0 Beta 3 |
| May | Release of SEAMCAT v5.3.0 Beta 4 |
| June | Release of SEAMCAT v5.3.0 |
| November | Release of SEAMCAT v5.3.1 Beta 1 and release of SEAMCAT v5.3.1 |

Responding to the ECC needs for SEAMCAT development

The main purpose for the continuous development of SEAMCAT is to provide the ECC and its stakeholders with an open-source, free-of-charge software tool that allows them to perform coexistence studies. With that objective in mind, the ECO and the SEAMCAT Technical Group (STG) work in close co-operation with the relevant ECC groups and respond to their needs.

5G remains a high priority work item for the ECC. In 2019, harmonised technical and regulatory conditions for 5G systems were set in the pioneer band. Work will continue for agreement on similar conditions for the existing 4G bands, in accordance with the **CEPT 5G Roadmap**. In this regard, the ECO, the STG and the ECC Project Team 1 – which is responsible for mobile communication networks – have worked together in recent years, on the identification of the requirements to further accommodate 5G systems into SEAMCAT. This co-operation resulted in the introduction of new propagation models, enhancements to the new antenna gain plugin and new IMT-2020 modules. In 2019, developments in SEAMCAT focused on improvement of the implementation of antennas, propagation models, new tools and the graphical user interface.

Of course, 5G is just one theme of the ECC's activities, and the needs of all of its subordinate groups continually evolve. In its role of managing the SEAMCAT project and providing the chairmanship of STG, the ECO has its finger on the pulse of this evolution. It is in a good position to react accordingly, and in a timely manner, to specific requests.

It is important to remember that SEAMCAT was conceived as a co-operative project in which CEPT Administrations contribute not only with ideas and suggestions but also with specific proposals for the enhancement of the tool. In that respect, the ECO continuously encourages CEPT Administrations and industry stakeholders to increase their involvement in the development of the tool, as they are ultimately the main beneficiaries of this work.

It is a very positive endorsement of the efforts made within CEPT that spectrum engineers involved in coexistence studies outside of Europe can also benefit from access to a continuously evolving tool.

In its role of managing the SEAMCAT project and providing the chairmanship of STG, the ECO has its finger on the pulse of this evolution. It is in a good position to react accordingly, and in a timely manner, to specific requests

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SEAMCAT Technical Group

The STG is a project team under WG SE that joins the expertise of Administrations and industry with the aim to:

- Provide technical support on the development of SEAMCAT, including the drafting of supporting user manuals;
- Liaise with and contribute to relevant groups within the ECC to respond to their needs related to SEAMCAT implementation; and
- Promote SEAMCAT in Europe and beyond.

STG decides which changes should be made to the software to respond to the needs both of ECC Working Groups and Project Teams. With that aim, STG meets both physically and remotely to make the decision-making more agile. In 2019, STG dealt with a wide range of topics, including the development of new and improved SEAMCAT tools, enhancements in antennas, implementation of new propagation models and improvements to the graphical user interface.

The importance of the work of STG is vital for the development of ECC Deliverables that encompass coexistence studies between wireless systems which require the use of a Monte Carlo simulator. Therefore, stakeholders involved in activities in WG SE project teams are regularly invited to take part in STG's work.

Conducting consultations to deliver better policies

The ECC adopts a transparent and evidence-based approach to developing its deliverables. Listening to, and carefully considering, the views of all concerned stakeholders is critical to delivering fair and effective policies and regulations. Central to the success of this approach is the public consultation process; the ECO takes responsibility for conducting consultations on behalf of the ECC (Further information on ECC Consultations is **available here**).

The role of the ECO in the consultation process is two-dimensional:

- Administrative responsibility: This includes the editing and formatting of the draft deliverables, the launching of the consultation process, the collection of the responses and, in many cases, the submission of a formal response to the consultation.
- Expert analysis: We perform a detailed analysis of the responses received. Those responses can include general comments, which provide views on the topics under consideration, and specific proposals (editorial, substantive or technical) intended to inform the draft deliverable under consultation. An amended version of the draft ECC Deliverable is then produced which takes due account of the views expressed by all stakeholders. This output of this activity frames the discussions that lead to the final approval of ECC Deliverables and, ultimately, their adoption and publication in the ECO Documentation Database (DocDB).

In 2019, we carried out 40 public consultations, which were used to inform the substance of new or revised ECC Deliverables. In total, we processed and analysed a total of 227 public consultation responses from administrations and other stakeholders.

Listening to, and carefully considering, the views of all concerned stakeholders is critical to delivering fair and effective policies and regulations

Maintaining a record of important deliverables (DocDB)

The ECC's policies on spectrum and numbering matters are given effect through its deliverables, namely ECC Decisions, Recommendations and Reports. Once these deliverables are approved at ECC or Working Group level, we make them publicly available in DocDB (https://docdb.cept.org). DocDB also provides access to related ETSI standards, European Commission Decisions and applicable EU legislation for each ECC Deliverable thereby providing a one-stop shop for those seeking context and background for these policies.



In 2019, there were over 193 000 page views to DocDB from users all over the world. They had access to all the documents available in DocDB, including over 700 ECC Deliverables in force, an improved archive of withdrawn or superseded deliverables and many additional informative documents. Over 40 000 documents were downloaded from DocDB in 2019.

DocDB also provides access to related ETSI standards, European Commission Decisions and applicable EU legislation for each ECC Deliverable



What is EFIS?

Since its establishment in 2002, the ECO Frequency Information System (EFIS) has been administered by the ECO and managed under the supervision of the ECC through its EFIS Maintenance Group (EFIS/MG). In 2007, EFIS became the 'European Spectrum Information Portal'. By doing this it fulfilled EC Decision 2007/344/EC on the harmonised availability of information regarding spectrum use in European Union Member States. EFIS is also referred to in Recital 24 of the Radio Equipment Directive (2014/53/EU). ECC Decision (01)03 defines the needs for EFIS for the whole CEPT membership. Some 46 CEPT Administrations now publish national frequency information in EFIS. All information in EFIS is available to the public at https://efis.cept.org/.

Providing a central source of specialist information

To support the ECC in its goal to be a focal point in Europe for information on electronic communications, the ECO provides relevant information on various topics. It does this through the ECC website and through our suite of tools, which are further described in this Report. A short, non-exhaustive guide is provided below. It describes the main types of information made available on the ECC website and in our databases and includes links to the respective areas.

| | SUBJECTS | DOCUMENTS | NATIONAL INFORMATION | SPECIALIST SERVICES | EVENTS |
|---|---|--|--|---|--|
| ECC Website http://cept.org/ecc | Group area: provides access to information on ongoing activities and progress within each group belonging to the ECC structure Topics: information on a wide range of topics and long-term studies on which the ECC is currently working or has recently developed regulations | Meeting documents: access to contributions, working documents and meeting reports from all groups within the ECC Newsletters: three to four ECC electronic newsletters published each year to promote ECC work items and their context within regulatory and market developments Framework: reference documents which set up the framework and targets of ECC activities | Contact points: national contacts of CEPT administrations and on special topics Regulatory information: information on national regulations applicable in specific spectrum and numbering topics | Consultation: information on public consultations and links to draft deliverables under consultation Questionnaires: links to current and past questionnaires carried out to fully inform the development of ECC deliverables | ECC Meeting calendar: information on upcoming meetings News: information outcomes of recent meetings, events and monthly summaries of ECC activities Workshops: information, presentations and summary Presentations: made by ECO and ECC officials at different fora |
| ECO Documentation Database (ECODOCDB) https://docdb.cept.org | | Deliverables: library of Decisions, Recommendations, Reports approved by ECC with associated archive and information Related documentation: links to relevant documents (from EC and ETSI) related to ECC deliverables | Implementation status: national implementation of ECC deliverables | | |
| ECO Frequency Information System (EFIS) https://efis.cept.org/ | Modules: specific features gathering information (ECC deliverables, national usage, associated statistics) on key spectrum topics (short range devices, mobile bands, fixed service, PMSE) | Regulatory references: links to ECC, EC and ETSI relevant documents Spectrum inventory: library of information documents for spectrum inventory purposes | Frequency tables: tables of frequency use in national CEPT administrations Spectrum inventory: national information on frequency usage and spectrum rights | | |
| ECC Work Programme Database (ECC WP DB) https://eccwp.cept.org/ | Work items: Follow the progress of, and find additional information on, individual items in the work programme of ECC and its subordinate groups | | | | |
| SEAMCAT https://seamcat.cept.org | Software: Access to SEAMCAT software, source code, release information and system requirements | SEAMCAT Handbook and ECC Report 252 as well as links to the document area of the SEAMCAT Technical Group | | SEAMCAT community: Information on bug reporting, related templates, bug reporting instructions and practical tips | SEAMCAT Workshops: Links to information on upcoming SEAMCAT workshops |
| 700 MHz Information Repository http://700mhz.cept.org/ | | | 700 MHz repository: national information on the coordination status | | |

in the 700 MHz band

In addition to the tools and services described in other sections of this Report, the ECO develops and maintains several pages on the ECC website dedicated to key topics such as those highlighted in the ECC Strategic Plan. They are designed to respond to some of the needs identified within the ECC by CEPT Administrations and other stakeholders.

The main objective is to reflect on the progress made in the ECC Work Programme on work items related to these topics, to develop material which may complement, inform, support or promote ECC Deliverables and to make specific information – i.e. national contact points, national regulatory frameworks etc – available to stakeholders. For historical purposes, we also maintain an archive of past topics which were previously the focus of ECC work.

ECO Bulletins

The purpose of the ECO Bulletin is to highlight technical, regulatory and market developments in the area of electronic communications in regions outside of Europe. This specialist information, compiled by ECO, validates and further informs the ECC's work by examining and comparing the policy approaches taken in other regions of the world. It also helps identify issues that could potentially be addressed in Europe in the near future. In 2019, we produced two ECO Bulletins, which were submitted to each of the two ECC Plenary Meetings and then disseminated to the subordinate groups. They addressed 30 different items covering a broad range of developments in spectrum and numbering management around the world.

CATIONS OFFICE

Providing specialist support to Com-ITU

Following a busy 2018, where the ECO supported Com-ITU's preparations and coordination for the ITU Plenipotentiary Conference (PP-18), 2019 was a quieter year with WRC-19 dominating CEPT's engagement at ITU level. The office did, however, provide administrative and expert support to three Com-ITU plenary meetings and supported Com-ITU's preparations for meetings of the ITU Council, Council Working Groups and Expert Groups. ITU Council is the ITU's governing body in the interval between Plenipotentiary Conferences.

The office also assisted Com-ITU's Project Team on strategic ITU-T issues (PT ITU-T) in its preliminary preparations for the World Telecommunication Standardisation Assembly which will take place in Hyderabad, India in 2020. These preliminary activities included the development and circulation of a questionnaire to European ITU sector members, associate members and academia on informing Europe's preparations for the Assembly. In addition, the office assisted PT ITU-T in preparation for regular meetings of the Telecommunications Standardisation Advisory Group.



Com-ITU Plenary Meeting, Rome, May 2019

2.2 Meeting the objectives of the ECC Strategic Plan

The ECO plays an important role in assisting the ECC to implement its five-year strategic plan. The current strategic plan (2015-2020) outlines the policy goals, key challenges and priorities that lay the foundation for the ECC's activities over the course of the five-year period. The ECO contributes to the overall fulfilment of the plan through its specialist support, which was outlined in previous sections. We are also assigned particular tasks in the context of the ECC's role as a focal point in Europe on electronic communications and its co-operation with other bodies.

Our actions in 2019 were executed with the following objectives in mind:

- To promote the ECC's achievements through the development of electronic newsletters and communications initiatives;
- To facilitate an exchange of views through the organisation of workshops on thematic issues and the development
 of training sessions to increase stakeholders' awareness of ECC activities;
- To increase the visibility of the ECC through presentations at relevant workshops and events;
- To support the ECC through continuous co-operation with other bodies, including the European Commission, ETSI, other external organisations and academia; and
- Provided a central source for specialist information.

In 2019, and in conjunction with the ECC Steering Group, we started the process of developing the ECC Strategic Plan for the period 2020-2025. This included setting up a forum for initial contributions that will provide the basis for formulating the new strategic plan and hosting a meeting of internal and external stakeholders at our offices in Copenhagen to discuss initial inputs and to plot a way forward for the next strategic cycle.

The office has an explicit role in developing a communications programme to promote the activities, results and achievements of the ECC

Promoting ECC Deliverables and activities through electronic newsletters and communications initiatives

As the administrative office of CEPT, the ECO leads in promoting the work of the three business committees. In particular, the office has an explicit role in developing a communications programme to promote the activities, results and achievements of the ECC towards all its stakeholders, internal and external. As part of this brief, the ECO publishes a periodic online newsletter three to four times per year. The ECC Newsletter is designed to provide readers with a greater insight into the world of spectrum management and numbering in an accessible form while providing information on some of the important technology, regulatory and market developments in Europe.

In 2019, the office released three editions of the ECC Newsletters containing eight articles on various spectrum and numbering subjects. In addition to the publication and distribution of the three published editions, we also identified the topics for inclusion and our experts authored all eight articles covered in those editions.



 The May edition included three articles. The first article was prompted by the publication of CEPT Reports 70 and 71 which set out the spectrum parameters that will facilitate safer and more effective intelligent transport systems in the future. This edition also included two articles on the role of E.164 numbers in international fraud and misuse of electronic communications service. The first of these two articles provided an overview of the main fraud techniques that industry and regulators are dealing with at present while the second article provided a summary from an ECC fraud-themed public workshop which was held in Brussels on 11 December 2018.

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- The August newsletter also contained three articles. The first article provided an overview of the relevant activities taking place within the ECC on spectrum for railway mobile applications including on GSM-R replacement by Future Railway Mobile Communication System and on Urban Rail intelligent transport systems. The second article provided a summary from an ECC thematic workshop on new spectrum solutions for industry sectors which was organised by the ECO in Copenhagen on 2-3 May 2019 (see following section for further details). The workshop provided an insight into the connectivity requirements of a range of sectors and explored innovative solutions for spectrum management which may help to inform ongoing and future work within the ECC. A third article in this edition looked at Europe's preparations to harmonise the 6 GHz spectrum band for Radio Local Area Networks as the demand for spectrum for wireless access systems continues to grow.
- The most recent edition of the newsletter was published in December 2019 and is a special edition focusing on the ITU WRC-19 which took place in Sharm El-Sheikh, Egypt, over four weeks from 28 October to 22 November 2019. The first article focused on the outcomes of the Conference on broadband, satellite, maritime and aeronautical communications as well as on the use of spectrum for scientific purposes. The second article provided a preview of the agenda for the next Conference in 2023 and on the preliminary agenda for 2027.

The newsletters were distributed electronically to almost 5 300 stakeholders and were published on the ECC website. You can subscribe to the ECC Newsletter for free on our **ECC newsletter page**, where an online archive of earlier editions is also available.

Throughout the year, the ECO also informed ECC Newsletters subscribers about the ECC's main activities and events, such as the results from both ECC Plenary meetings held in 2019, notifications on upcoming workshops, and on the outcomes of those workshops. Subscribers were also notified about questionnaires, public consultations, and any releases of new versions of our tools and services.

The publication of ECC Newsletters and of news releases are backed up by short notifications, disseminated through the ECC Twitter account, @CEPT_ECC, which is managed by the ECO.



Our use of Twitter continues to remain focused on the communication of factual information, rather than opinions, concerning the ECC's activities. During ECC workshops and major conferences, such as WRC, we endeavour to provide frequent updates to our Twitter followers on relevant issues and insights as they arise.

In order to describe the more routine activities within the ECC in greater detail, we also maintained our efforts in the development and publication of monthly news summaries on the ECC website. These monthly summaries provide a snapshot of the main outcomes of ECC Working Group and Project Team meetings and events that take place each month. They are developed from contributions provided by the ECO experts responsible for the various ECC groups. Throughout the year, the monthly summaries were published as news items on the ECC web page.

ECC MONTHLY NEWS SUMMARY FOR NOVEMBER AND DECEMBER 2019 ECC monthly news summary for November and December 2019 This summary provides a roundup of the main outcomes of ECC Working Group and Project Team meetings which have takes place in November and December 2019 included for this period: 28 October-22 November 2019; WRC-19 concluded in Ecvol with many positive outcomes for CEPT 19-21 November, WG NaN adopts Recommendation to increase trust in calling line identification (CLI) 9-11 December, SEZ progressed work on preparing the draft ECC Reports relating to compatibility studies for Ralway Mobile Radio systems 9-11 December: SE45 progressed its work on the short-term protection of fixed service point to point applications from WAS/FLAN 11-12 December: FM58 continues work on an ECC Report on "Dictisation of marine Voice VHF" 12-13 December: STG progressed work on the enhancements of the SEAMCAT software plugin 17-19 December: SE21 resolved the comments from public consultation for draft ECC Report 310 on the future role of receiver parameters in 55-19 December: FM56 made good progress on agreeing text for the draft CEPT Report A in response to the EC mandate on FRMCS 15-20 December: SE40 successfully resolved the comments from public consultation on a draft ECC Report on the use of land, maritime and

In collaboration with the CPG Chairman and the CEPT co-ordinators, the Office developed and published weekly reports from WRC-19, which were also publicised on Twitter and Linkedin. These weekly reports provided information on the progress achieved at the end of each of the four weeks of the Conference and received over 5 000 views on the CEPT portal. The office registered very positive feedback from delegates on this initiative, who appreciated receiving a synopsis on the step-by-step progress at WRC-19.



Organising workshops on thematic issues and developing training sessions to increase awareness of ECC working methods and activities

Thematic workshops provide an excellent platform for exchanging information, raising awareness of ECC activities and informing ECC Deliverables and follow-up activities. The ECO plays a central and leading role in organising these events. In 2019 two such workshops were organised. The first workshop addressed "new spectrum solutions for industry sectors" and we also organised the sixth edition of a "CEPT workshop on European spectrum management and numbering".

Public workshop on New Spectrum for Industry Sectors (Copenhagen, Denmark, 2-3 May 2019)

CEPT Workshop on New Spectrum Solutions for Industry Sectors ECC Scandic Hotel Copenhagen, 2-3 May 2019

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New Spectrum Solutions for Industry Sectors

Ongoing developments in technology are changing the way the spectrum is managed. There is increasing demand for spectrum from a diverse range of new applications, requiring new features such as super-low network latency and mission critical application support. At the same time there are opportunities including much higher radio network capacities, a high degree of flexibility to organise networks – such as 'slicing' –and new tools enabling the sharing of spectrum. In order to understand how the ECC can balance these requirements and opportunities, the ECO arranged a CEPT workshop on new spectrum solutions for industry sectors. More than 150 radio industry and regulatory experts, including 38 speakers, gathered in Copenhagen for the two-day event in early May. The workshop aimed to predict identifiable spectrum requirements to fulfil the upcoming communications needs of different sectors of industry.

The ECO was responsible for the complete organisation of the event - selecting a suitable venue in Copenhagen, all practical arrangements, setting up a **workshop webpage**, promoting the workshop, handling the documentation and registration, as well as supporting the meeting session organisers and speakers in all aspects necessary for such a workshop. The ECO led on the

development of the agenda for the event and the necessary co-ordination of the presenters, resulting in a comprehensive programme covering the main technical and regulatory aspects.

Overall, the workshop was a success, providing insight into connectivity requirements from a range of sectors, as well as innovative solutions, which helped to inform ongoing and future work within the ECC.

Sixth CEPT Workshop on European Spectrum Management and Numbering (ECO, Copenhagen, Denmark, 3 September 2019)

The sixth edition of a workshop on European Spectrum Management and Numbering was targeted at newcomers working for national administrations and industry stakeholders in the area of regulations for electronic communications. It was also targeted at those interested in broadening their knowledge of modern regulation of spectrum management and numbering in Europe. The workshop was attended by 51 participants from a broad range of stakeholders. The workshop presentations were prepared by ECO staff and by Dr Michael Sharpe, ETSI Director of Spectrum and Equipment Regulation, and addressed the following areas:

- About CEPT/ECC;
- Getting familiar with the ECC, its structure and its working process:
- Introduction to the European spectrum regulatory framework the respective roles of the ECC, ETSI and the European Commission;
- European preparation for the ITU World Radiocommunication Conferences;
- The current topics and trends in spectrum and numbering in Europe;
- The role of the ECO who are we, what can you get from us.

These workshops are run periodically, typically every 18-24 months. Please keep an eye on the website for information on the next event.

Increasing the visibility of the ECC through presentations at events

During the year, ECO experts attended a range of conferences and workshops where we delivered presentations on thematic topics while promoting the work of the ECC on related matters. These events provide the office with an opportunity to share information with relevant stakeholders and to increase awareness and understanding about the ECC's areas of expertise, its policies and regulations.

European Emergency Number Association 2019 (Dubrovnik, Croatia, 10-12 April 2019)

EENA is a non-governmental organisation with the mission to contribute to improving the safety and security of people. The EENA annual conference provides a platform for emergency services, public authorities, decision makers, researchers, associations and solution providers with a view to improving the emergency response in accordance with citizens' requirements. ECO Deputy Director, Freddie McBride, chaired two panel sessions on cyber-security in emergency services organisations. Representatives from Cisco, Alcatel Lucent, EENA and the government of New Zealand discussed the unique challenges facing emergency services organisations in preparing for cyber-attacks. The discussion covered, amongst other things, GDPR obligations related to the storing of location data on emergency callers.



Freddie with fellow presenters at EENA 2019

Marconi Radio Days 2019 (Bologna, Italy, 11-14 April 2019)

The 13th annual Marconi Radio Days took place in Bologna from 11 until 14 April 2019. A full programme of events was provided, aimed at exploring critical ideas to promote a better understanding of the functioning mechanisms of the media system. The event was organised by the Municipality of Sasso Marconi, in co-operation with the G. Marconi Foundation, the Emilia-Romagna Region and the Metropolitan City of Bologna.

ECO spectrum expert, Doriana Guiducci, attended the event and provided a presentation entitled "From analogue radio switch-off to the networks of the future".



Marconi Radio Days – April 2019

EUTC Spectrum Workshop (Brussels, Belgium, 24 April 2019)

The European Utilities Telecom Council (EUTC) held a workshop on 24 April 2019 focusing on key areas of radio spectrum relating to current and future applications demanded by the utility sector. Subjects included spectrum to support enhanced applications in the field area network and transition to the smart grid, threats to existing allocations, opportunities presented by 5G, cyber security and potential wireless solutions to replace end-of-life wire line (copper) based services. ECO spectrum expert, Peter Faris, was invited to moderate a session on international spectrum developments, covering topics including the European regulatory environment, standardisation and preparation for WRC-19.

LPRA Radio Solutions 2019 (Groenlo, The Netherlands, 16-17 May 2019)

The Low Power Radio Association (LPRA) represents the interests of the Short Range Devices (SRD) industry. SRDs are used in a wide range of applications as diverse as remote controls for home automation and car key fobs, wireless smoke alarms, RFID tags, medical telemetry and remote environmental monitoring/control systems. LPRA periodically organises an event where interested stakeholders come together to share views and insights on the latest regulatory and technology trends affecting SRDs. The 2019 event was held in Groenlo in The Netherlands. ECO spectrum expert, Robin Donoghue, attended and made a presentation entitled "Recent and Planned Changes in SRD Regulations" which covered, amongst other things, recent changes to ERC Recommendation 70-03 relating to the use of SRDs.



Commonwealth Spectrum Management Forum (London, United Kingdom, 19-21 June 2019)

The Commonwealth Telecommunications Organisation is committed to using information and communication technologies appropriately and effectively for development. This Forum aimed to build the capacity of stakeholders in managing spectrum from planning and assigning to utilising and recovery, as well as to help stakeholders prepare for WRC-19. In that respect, Peter Faris participated in the forum and presented on CEPT's preparations for WRC-19.



ITU Seminar on Radiocommunication Matters for Europe (SRME-19) (Tirana, Albania, 24-27 June 2019)

This seminar was co-organised by the ITU and hosted by the Ministry of Infrastructure and Energy of Albania in co-operation with national regulatory authorities and Regional Coordination Council (RCC). The main objective of the seminar was to contribute to the implementation of the ITU Regional Initiative for Europe on Broadband Infrastructure, Broadcasting and Spectrum Management as adopted at WTDC-17. ECO spectrum expert, Peter Faris, took part in the seminar and presented on CEPT's preparations for WRC-19.



The attendees at SRME-19, with Peter back row, centre

Supporting the ECC and CEPT through continuous co-operation with other organisations

The ECC represents European interests in the ITU on matters related to the use of the radio spectrum, satellite orbits and numbering resources. The ECC also recognises the benefits of a strong partnership with all key stakeholders, including ETSI and the European Commission, to facilitate the delivery of technologies and services for the benefit of society. In this context, the ECO plays a fundamental role in building effective working relationships with these key partners of the ECC so that policy, regulation and standards development activities are aligned. In order to increase the visibility of the ECC's achievements, the ECO is also active in helping the ECC extend its reach on a range of topics towards other external organisations, including the other regional telecommunication organisations, and also towards universities and research institutions.

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The ECO plays a fundamental role in building effective working relationships with these key partners of the ECC so that policy, regulation and standards development activities are aligned



The European Telecommunications Standards Institute, ETSI, is an essential partner of CEPT and its committees, in particular the ECC. The ECO plays an important role in this partnership through its direct participation in ETSI activities and its close co-operation with the ETSI secretariat.

The primary objective of our involvement in ETSI activities is to ensure that the technical requirements resulting from the regulations and studies developed by the ECC are understood and properly taken into account in the related standardisation activities within ETSI.

The ECC and ETSI 's arrangements for co-operation on standardisation and regulation for radiocommunications devices and systems is formalised in a Memorandum of Understanding (MoU). The ETSI Technical Committee on EMC and Radio Spectrum Matters (TC ERM) is our main focus concerning radio spectrum issues. It is within this forum that the co-operation process is initiated in response to an industry proposal for a new system, service or application. A work item is created and considered for adoption in accordance with the ETSI Technical Working Procedures which are part of the ETSI Directives. The **ETSI work programme** is then updated accordingly.

Sometimes a proposal for a new or revised radiocommunications system, service or application is first presented within the ECC, typically within the ECC Working Group Frequency Management (WG FM). In such cases, the relevant ECC group will inform ETSI TC ERM about the proposed new work item and, when relevant, will advise the promoter of the new system to initiate a system reference document (SRdoc) and/or European standard through the relevant ETSI mechanisms. You can read more about the co-operation process **here**. One of TC ERM's duties is to be responsible for ETSI's interface with the ECC on radio matters. In 2019, ECO spectrum experts, Robin Donoghue and Jaime Afonso, shared this responsibility and between them attended all three meetings of TC ERM held at ETSI's headquarters in Sophia-Antipolis in France. The main goal of this participation was to contribute to the continued consistency between ECC and ETSI activities, to submit information documents on the most relevant developments within ECC and to provide the necessary explanations to support ECC activities and outcomes, where appropriate.

The ECC website contains a **dedicated page** describing how our two organisations work together. It includes a set of documents and tools designed to strengthen the synergy between ECC and ETSI.

This page contains useful reference information, developed in co-operation with the ETSI Secretariat, including:

- A spreadsheet containing a list of ETSI Harmonised Standards (covering article 3.2 of the Radio Equipment Directive) under development which are related to ECC activities. It also shows their relation to the ECC Deliverables or ongoing ECC activities. Its purpose is to inform the ECC participants of the ETSI activities towards the development of Harmonised Standards and to support the consistency between ETSI Harmonised Standards and related ECC Deliverables.
- A SRDoc mapping spreadsheet providing a mapping of ETSI SRDocs (published and drafts) and the resulting ECC activities (mainly work items from the ECC Work Programme Database and then, once approved, corresponding Deliverables in the ECO Documentation Database).
- A relationship matrix reflecting the work and information connections between groups within both organisations, including where there is ongoing co-operation between the different ECC and ETSI groups. The matrix is updated several times per year, subject to requirements.
- A brochure which provides an introduction to the regulatory environment in Europe for radio equipment and spectrum.

In the field of numbering and networks, the ECC and ETSI maintain close co-operation on numbering and networks matters through technical liaison and participation by representatives of both parties in relevant working group, project team and technical committee meetings in accordance with the MoU. In 2019, the ECO, representing ECC interests, continued its participation in ETSI's Special Committee on Emergency telecommunications (EMTEL). EMTEL has the status of a Special Committee within ETSI, which provides the group with the flexibility to produce Technical Reports as well as Technical Specifications.

The ECO also maintained its close co-operation with ETSI's Technical Committee Network Technologies, ETSI's centre of expertise on network technologies, which provides architecture and protocol specifications for network interoperability and interconnection. A dedicated NaN technical liaison officer from ETSI NTECH continues to participate in each WG NaN meeting and provides progress reports on NTECH's work programme.

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European Commission and European Union relevant activities



The ECO continued its task of providing regular support to the ECC as an observer representing the ECC at all the 2019 meetings of both the Radio Spectrum Committee (RSC) of the European Commission (EC) and of the Radio Spectrum Policy Group.

In particular, the ECO prepared the summary report of ECC activities for each RSC meeting and supported the ECC Chairman during his presentation, when required. We also participated in one ECC-EC consultation meeting held in June 2019 as part of the ECC Delegation.

Our involvement in these activities is mainly driven by the need to ensure an efficient interface between the ECC and the EC in implementing the Radio Spectrum Decision. Furthermore, it also provides us with valuable background information that we can feed into our activities within the relevant ECC groups, in particular when developing CEPT Reports in response to Mandates from the EC.

The Radio Equipment Directive Expert Group (RED EG) replaced the Telecommunication Conformity Assessment and Market Surveillance Committee and assists the European Commission in questions concerning the implementation of the Radio Equipment Directive (2014/53/EU, RED) and in the preparation of legislative proposals and policy initiatives concerning radio equipment. The RED EG is composed by the Member States' authorities, European standardisation bodies, the association of conformity assessment bodies and organisations operating at European level such as manufacturers, industrial users, equipment vendors and others. In 2019, the ECO participated in two meetings of the RED EG.

The ECO also continued to support ECC Working Group Numbering and Networks to foster and maintain a close working relationship between the CEPT and the Body of European Regulators for Electronic Communications (BEREC) through collaboration at the working group level. The European Electronic Communications Code (EECC) entered in to force on 20 December 2018. The ECO/ ECC exchanged letters with BEREC on co-operating on numberingrelated provisions in the code where BEREC has been assigned tasks and the ECC/ECO can provide technical expertise. The main objective of this relationship is to leverage the different skillsets of both groups to encourage further co-operation and avoid duplication of effort in the implementation of the new provisions. In 2019, work on three numbering-related projects was successfully completed following close co-operation between ECC/ ECO and the BEREC Working Group tasked with implementation of the new regulatory framework.

ADCO RED and RED CA

Directive 2014/53/EU, "The Radio Equipment Directive (RED)", specifies requirements that products must meet in order to be placed on the market and put into service. It includes the essential requirements for radio equipment to both use and support the efficient use of radio spectrum in order to avoid harmful interference.

The implementation of the RED at European level involves several organisations including the European Commission and ETSI. The ECC has a key role to play in this area through its technical expertise in radio spectrum. The ECO has been active for many years in supporting ECC in this context. It led us to act as an ECC focal point with two influential bodies for the implementation of the RED: the Administrative Co-operation in RED (ADCO RED) and the RED Compliance Association (RED CA). Both of these are major groups of European regulators in the RED compliance area. In 2019, we attended two meetings of ADCO RED and one meeting of RED-CA.

ITU

ECO experts participate in the relevant study group meetings of ITU within the ITU-R (Radiocommunication) and ITU-T (Telecommunication Standardisation) sectors. Our participation in these meetings provides us with the opportunity to promote European achievements to other regions of the world and to engage and exchange views with regulatory experts on activities and developments outside of Europe.

CEPT's engagement with ITU in 2019 was dominated by WRC-19. ECO spectrum expert, Doriana Guiducci, participated, along with representatives of the ECC's Conference Preparatory Group (CPG), in the 2nd Conference Preparatory Meeting for WRC-19 (CPM19-2) which took place in Geneva from 18 to 28 February 2019. The main objective of this meeting was to prepare a consolidated Report on the ITU-R preparatory studies and possible solutions to the WRC-19 agenda items to support the work at the Conference. Doriana also participated in the 3rd ITU Inter-regional workshop on WRC-19 preparation. This workshop took place in Geneva from 4 to 6 September 2019 and provided an overview of the status of the preparation for WRC-19 in the various Regional Organisations, who presented their draft preliminary common views and positions on several key agenda items. The main goal of the workshop was to exchange views and have a better understanding of the most challenging WRC-19 agenda items and issues.



3rd ITU inter-regional workshop on WRC-19 preparation $\ensuremath{\mathbb{C}}$ ITU Pictures

In the ITU-T sector, the ECO also participated in two meetings of Study Group 2 (SG2) which took place at ITU Headquarters in Geneva from 19 to 28 February and from 4 to 13 December. SG2 is the lead study group with responsibility for operational aspects of service provision and telecommunications management. It is an essential forum for discussing and developing standards on international numbering matters. Europe's main interest in SG2 activities in 2019 were on matters related to fraud and misuse of electronic communications services and the use of ITU numbering ranges for M2M/IoT.

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Promoting relationships between the CEPT and the other regional telecommunication organisations

As the CEPT secretariat, the ECO acts as a permanent point of contact with other regional telecommunication organisations recognised by the ITU. We are the point of contact in the course of preparations for the main ITU conferences. In 2019, we arranged for the participation of CEPT representatives in meetings of other regional organisations, and vice-versa, in preparation for WRC-19 and the World Telecommunication Standardisation Assembly. The ECO organised the participation of CEPT delegations in meetings of the Inter-American Telecommunication Commission (CITEL), the African Telecommunications Union (ATU) and Asia-Pacific Telecommunity (APT). Our central position in the exchange between CEPT and the other regional telecommunication organisations helped us to facilitate closer working relationships and a spirit of co-operation, collaboration and compromise.

The the ECO acts as a permanent point of contact with other regional telecommunication organisations recognised by the ITU

2.3 Managing our operational support

The ECO is committed to delivering first-class support to CEPT and its committees through the provision of a wide range of administrative, operational and expert services. This back-end support is vital in the day-to-day operations of CEPT as it provides our stakeholders with timely and relevant information on technical, regulatory and market developments, as well as providing a central point for enquiries and facilitating communications between our members throughout Europe.

Our objective is to ensure that relevant information is available to people when they need it, and we do this through managing, maintaining and updating various information sources on our web portal throughout the year. We also provide meeting facilities, both physical and virtual, as well as offering administrative support to CEPT and its committees as required.

Managing CEPT's family of websites



The CEPT portal provides a window for the world to explore the work of CEPT and its committees. It provides a common platform to the websites of CEPT, its three business committees (ECC, Com-ITU and CERP) and its permanent Office (ECO) – the five entities that constitute the CEPT family.

The CEPT portal provides a window for the world to explore the work of CEPT and its committees Earlier this year, the Office deployed new features and error corrections to the Questionnaire Tool and integrated the new email list server to support group mail functionality following some security-related problems identified in September 2018.

We also started work on a stabilisation project which involved a full evaluation of our system hardware and software components with the objective of defining the next generation of the CEPT portal. A key input to this work was the results of a questionnaire circulated in 2019 to our user community on their operational requirements and preferences. Work has already commenced with our developers to migrate the CEPT portal to a new technology stack. This project will continue in to 2020.

| THE CEPT PORTAL IN 2019 | | |
|--|-----------|--|
| Number of user profiles registered to the portal | 5 371 | |
| Unique visits* | 119 974 | |
| Page views | 1 336 157 | |
| Bounce rate** | 42.73% | |
| | | |

** Bounce rate is calculated from single-page visits (visits where users have only seen one page) divided by the number of entries on the site

Managing our databases

Apart from EFIS, DocDB and SEAMCAT, the ECO also manages and updates other important online information systems on which our main European stakeholders and other interested parties rely.

Maintaining and upgrading the ECC Work Programme Database



The ECC Work Programme Database (WP DB) is part of a suite of software tools developed by the ECO to provide the ECC and its constituent bodies with online facilities for maintaining and updating their respective work programmes on an ongoing basis. It provides our external stakeholders with visibility on our work items and associated timelines. ECO experts supporting the work of the various ECC groups, take the lead on maintaining the information on work items in the WP DB. This provides users with useful features in terms of providing an overview of current and past work items, a search and filtering facility and the ability to create Gantt charts to illustrate the work of any ECC group. The WP DB has become an integral tool for managing the ECC's work while providing interested parties with a high-level view on the overall scope of the ECC's activities.

At the end of 2019, the WP DB contained information related to over 550 ECC work items, either active or finalised, including an up-to-date status on the 95 work items which were in progress over the course of 2019. The WP DB received 183 230 page views in 2019 from 13 231 unique visitors. The WP DB is available at https://eccwp.cept.org/.

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The WP DB has become an integral tool for managing the ECC's work while providing interested parties with a high-level view on the overall scope of the ECC's activities

Information repository on progress for co-ordination of the 700 MHz band

Following the implementation of the digital dividend in the 700 MHz band (i.e. change of use of the band 694-790 MHz from broadcasting to mobile services), the ECC developed and currently maintains a tool that allows users to monitor and review the progress of bilateral and multilateral co-ordination negotiations between CEPT countries on the use of this band. The repository is available on the website with the possibility for administrations to continue to upload information when appropriate. Further development of the tool has been stopped in accordance with a decision taken by the ECC plenary.

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The PSAP Directory is a directory containing contact information for Public Safety Answering Points (PSAPs) to be used as a backoffice support tool for PSAPs to contact each other when a need arises. For example, the directory would be used in the event of an emergency call where assistance may be required in another country. The PSAP Directory came into service on 1 December 2018 and now contains contact information for 18 PSAPs across Europe. It is expected that this number will increase in the years ahead which will make the PSAP Directory an integral tool to facilitate PSAP communications across borders. The information contained in the PSAP Directory is confidential in nature and is only accessible to participating PSAPs.

The new regulatory framework for electronic communications in the European Union – **The European Electronic Communications Code** (EECC) – entered into force on 20 December 2018. Article 109(8) of the EECC places an obligation on BEREC to "maintain a database of E.164 numbers of European emergency services to ensure that they are able to contact each other from one Member State to another, *if such a database is not maintained by another organisation*".

BEREC and the ECO formally exchanged letters on this obligation and in 2019 BEREC assessed the technical suitability of the ECO PSAP Directory in meeting its legislative obligations under the EECC. BEREC concluded that the ECO PSAP Directory is technically compliant in meeting the requirements of this legislative provision. BEREC has outlined plans, in its Draft Work Programme for 2020, to explore how it can further promote PSAP participation in the PSAP Directory, in order to contribute to fully implementing Article 109(8).



Promoting electronic working arrangements

The CEPT Committees are committed to improving the efficiency of working processes by making use of electronic methods of working to complement physical meetings. In this respect, we provide our stakeholders with access to four main tools and services dedicated to electronic working:

- Web-meeting facilities: Our web-meeting facilities are based on the use of the commercial 'GoToMeeting' platform combined with the meeting management features integrated into our portal. They are now part of CEPT's routine in terms of meeting management. In 2019 we hosted 192 web meetings, a significant increase on the 2018 figure of 168, for different groups within the three business committees which attracted over 1 300 participants. ECO experts can arrange on request the use of GoToMeeting to accommodate virtual participation in meetings hosted externally.
- Group email facilities: For the three CEPT Committees and their subordinated groups, we provide and manage a range of dedicated group email addresses to facilitate ongoing communications between the individual members of each group and across groups. The group mail functionality is enabled through an email list server which is integrated with the CEPT portal. When a user joins a group, they are automatically added to the email list for that group. An email group can relate to working group, project team or a group set up for collaboration on a particular work item. Users can customise their participation in various groups in their CEPT profile settings. In 2019, we managed more than 70 email reflectors to assist CEPT groups.
- CEPT Forum: The forum features have been integrated into the CEPT portal since 2012 and have been further improved since then. The extent of its use depends upon the individual groups and project teams' needs. The CEPT Forum serves to complement physical meetings, web meetings and the email reflectors to progress the work on specific work streams and to exchange views on emerging topics of interest.
- CEPT Chat system: This system is activated upon request to facilitate CEPT co-ordination at major events. The chat function is integrated with the CEPT portal and includes a feature to access the chat facility from a mobile device. This chat system is widely used for CEPT co-ordination at ITU conferences, most recently at WRC-19.

Providing facilities for collaborative working

CEPT's work is based on collaboration between regulators and industry representatives from different countries across Europe. We provide first class meeting facilities at our premises at Nyropsgade, 37 in central Copenhagen, where we have been located since May 2014.

Our meeting rooms have internet access for delegates, as well as audio/visual facilities. We have supported remote participation in meetings hosted at our premises for many years. In 2019, we upgraded our audio/visual equipment and installed a new remote meeting system based on GoToMeeting. This facility allows remote participation in meetings hosted at the ECO with a very high-quality audio/visual experience.

In 2019, we also upgraded the furniture in the meeting rooms. In selecting the new furniture, we prioritised modernisation and functionality. We focused on colour and form in order to create a practical and energetic workspace for our customers. We hope you like the new look!

In 2019, the ECO hosted 27 meetings, spread across 53 days, attracting 570 delegates to our premises in Copenhagen. The number of meetings was significantly lower in 2019 than the previous year but this can be mainly attributed to WRC-19 where many of our groups within the ECC had a reduced meeting schedule. These meetings ranged from small working sessions with fewer than 10 participants to larger events accommodating more than 50 participants.





Number of meeting delegates per meeting at ECO in 2019

Number of meetings 2015 -2019



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Hamlet Plus

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Amenities

Total capacity 60 Participants Layout Classroom

• Projector with computer connections

• Microphone and Sound system

(HDMI, VGA, adaptors for iOS devices)

• Remote participation facilities based on

• 230v standard European power sockets

• Event Coordinator's setup support

meeting rooms (Hamlet and Horatio)

Hamlet Plus can be split into two smaller

with capacity for 40 and 20 participants

• Large co-view screens

GoToMeeting

at each seat

• Flipchart(s)

• Whiteboard

respectively.

• Writing materials

• Wi-Fi

Ophelia

Total capacity 25 Participants Layout Boardroom

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Amenities

- Large co-view screens
- Projector with computer connections (HDMI, VGA, Clickshare, adaptors for iOS devices)
- Sound system
- GoToMeeting
 - Wi-Fi
 - 230v standard European power sockets at each seat
 - Writing materials
 - Flipchart(s)
 - Whiteboard

Ophelia was expanded in 2019 thereby increasing the capacity of the room from 15 to 25 participants.





Here at the ECO we have been providing first class meeting facilities for our CEPT customers for many years. CEPT, and its three autonomous committees, develop harmonised policies in the fields of electronic communications and postal services. We achieve our goals collectively with a strong spirit of co-operation and collaboration where decisions are taken mainly by consensus.

Achieving consensus requires trust and empathy and face-to-face meetings allow participants to build trust, develop friendships and foster closer working relationships. Steve Jobs once stated that "there's a temptation in our networked age to think that ideas can be developed by email and iChat. That's crazy. Creativity comes from spontaneous meetings, from random discussions". Meetings at the ECO provide our clients with a platform for informal discussions and networking over coffee and lunch which can be just as important as the formal proceedings of the meetings themselves.

We have three meeting rooms at the ECO – Hamlet Plus, Ophelia and Gertrude – whose names are inspired by Shakespeare's famous tragedy which of course is set in Denmark.

Further information on meetings at ECO is available on our website including on our meeting facilities, how to reach ECO and on hotels nearby.

AN COMI

Explore the meeting facilities at the ECO





Gertrude

Total capacity 10 Participants Layout Boardroom Amenities • Large screen with Computer connections (HDMI, VGA) • Remote participation facilities based on GoToMeeting • Video conferencing facilities • Remote participation facilities based on • Wi-Fi • 230v standard European power sockets available • Writing materials • Whiteboard

• Event Coordinator's setup support

Gertrude is our newest meeting room and can accommodate up to 10 people. It is ideal for holding breakout sessions from larger meetings taking place.

• Event Coordinator's setup support





Supporting the CEPT Presidency

In 2019, ECO support to the CEPT Presidency was mainly confined to routine activities, such as: the invoicing and collection of CEPT member financial contributions; correspondence with the CEPT Co-Presidency; responding to requests about CEPT, and maintenance of the sections of the website which relate to the CEPT Presidency.

Supporting the European Committee for Postal Regulations (CERP)

This year was another busy year for CERP as it continues to grow in importance as a platform for European countries to agree on common positions to face the challenges of the international postal sector and, in particular, to prepare for meetings of the Universal Postal Union (UPU). ECO maintained its operational support to CERP and its Working Groups in 2019. This involved secretarial support, correspondence with the CERP Chairmanship, responding to correspondence from external bodies and maintenance of the CERP section of the website and CERP documentation. We also assisted on CERP outreach activities including on the development and distribution of five editions of the CERP newsletter.

The ECO Director, Per Christensen, attended and addressed the 54th CERP Plenary Meeting held in Skopje, North Macedonia, on 12 and 13 June 2019. We also organised and facilitated five web meetings of the CERP Steering Committee and promoted the use of our tools and services used by the other CEPT Committees to CERP throughout the year.



CERP Plenary Meeting, 2019

Supporting the satellite monitoring Memorandum of Understanding

Due to the highly specialised and costly nature of satellite monitoring facilities, a group of European national authorities have established an agreement under the Satellite Memorandum of Understanding (SAT MoU) to share access to the space radio monitoring station located in Leeheim, Germany. The agreement facilitates satellite monitoring activities within CEPT, particularly to investigate interference involving satellites. In 2019, the signatories of the agreement are: Cyprus, France, Germany, Luxembourg, The Netherlands and Switzerland.



Leeheim, Germany

Among the monitoring activities carried out in Leeheim, one can highlight those triggered by the Working Group Spectrum Engineering Project Team SE40. SE40 responsibilities triggered a satellite monitoring campaign of IRIDIUM's NEXT constellation in 2017. The full constellation of IRIDIUM NEXT satellites was measured during 2019 (read **here** for more information).

In this context, the ECO provides secretariat support to the SAT MoU management committee and manages CEPT's SAT MoU account, which was set up to cover the costs of using the Leeheim facilities. The ECO also acts as the interface between the SAT MoU and the ECC.

In terms of the promotion of the SAT MoU, the ECO maintains a **document** describing SAT MoU activities since July 2013 and a **leaflet** that summarises the importance of the SAT MoU in the satellite monitoring activities.

Further information can be found here.



SECTION THREE

Governance and Financial Summary

Structure and Governance

The ECO is governed by the ECO Council which consists of representatives of the Contracting Parties to the Convention for the establishment of the European Communications Office ('The ECO Convention'). The Convention inter-alia defines the terms of reference for the ECO and its funding arrangement. In 2019, 35 countries were officially contracting parties to the ECO Convention while 36 countries contributed to the financing of the ECO. The ECO Council Chairperson and the ECO Director have entered discussions with some of the CEPT Administrations which are not currently members of the ECO Council in order to attract new signatories to the ECO Convention. The Council has governance responsibilities, which include agreeing the ECO's budget and work programme on an annual basis. These are prepared by ECO staff under the guidance of the Director. The Council's preferred method of working is by consensus.

The ECO Council held its 20th and 21st meetings at the ECO in Copenhagen, Denmark, in May and December 2019 respectively. Ms Marta Leandro of Portugal has been Chair of the Council since her election in May 2015 and was re-elected for a second threeyear term in May 2018. Dr Samuel Ritchie of Ireland has been Vice-Chairman since December 2015 and was re-elected for a second three-year term in November 2018.

Financial Summary

The ECO was approximately 98% financed by the following 36 countries in 2019:

Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and Vatican City.

The remainder is from directly funded services (e.g. administration of the CEPT and the Satellite MoU).

The following figures provide a financial summary for 2019.

Statement of income and expenses

INCOME

EXPENDITURE

Staff Costs (salaries, pension contributions, etc.)

Operating Expenses (outsourcing, projects, professional fees, travel)

Office Facilities (rent, building related expenses)

Expenditure total

Operating balance for end of year

Based on exchange rate of DKK 1 = EUR 0.134

EUROPEAN COMMUNICATIONS OFFICE

| | DKK | EUR |
|---|------------|-----------|
| | 18 108 092 | 2 425 415 |
| | | |
| | 11 498 265 | 1 540 088 |
|) | 4 124 438 | 552 431 |
| | 1 665 022 | 223 015 |
| | 17 287 725 | 2 315 534 |
| | 820 367 | 109 881 |



Countries participating in the ECO Council 46





Nyropsgade, 37

ECO

1602 Copenhagen

www.cept.org/eco