



An Introduction to the WRC

A beginner's guide to the World
Radiocommunication Conference



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The background features a faint, light gray illustration of a camera and a bicycle. The camera is positioned in the upper half, and the bicycle is in the lower half. The word "Introduction" is written in a large, white, sans-serif font, centered horizontally and partially overlapping the camera illustration.

Introduction

History

By the middle of the 19th century, the telegraph was transforming communications across Europe and North America, as well as extending its reach around the world.

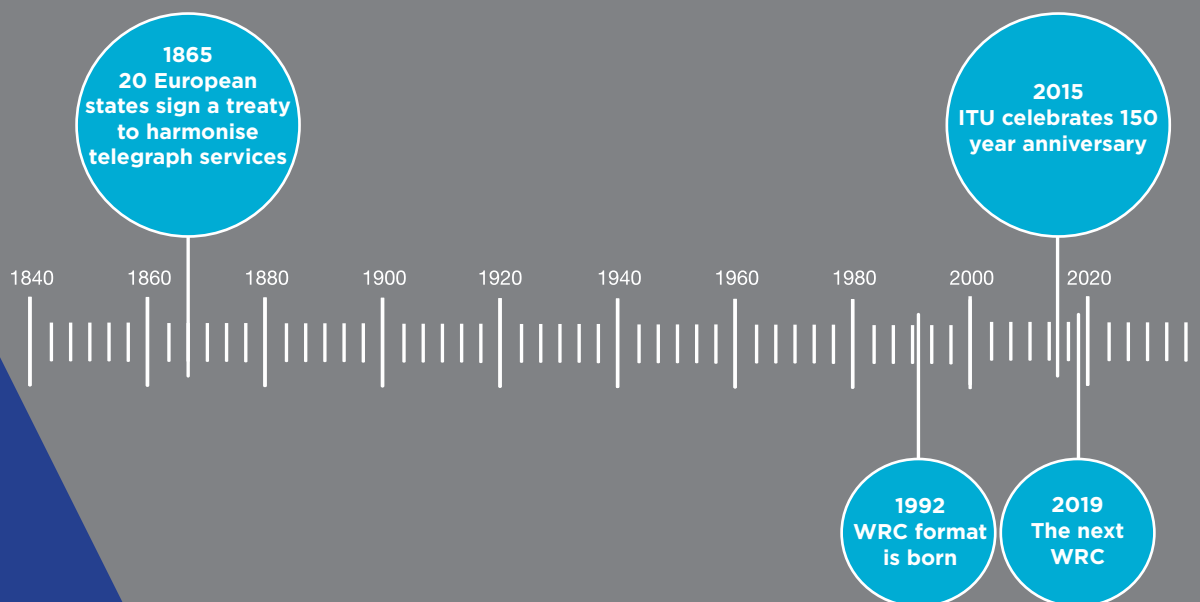
However, barriers could occur when a message had to cross from one national jurisdiction to another. To overcome this, agreements were made between countries. In 1865, 20 European states signed a treaty to harmonise telegraph services: this was the birth of the International Telecommunication Union (ITU), which last year celebrated 150 years.

ITU is based in Geneva, Switzerland. Today, the organisation is the United Nations' specialised agency for information and communication technologies. Its members include 193 countries and almost 800 private-sector companies and academic institutions.

One of ITU's most important tasks is to allocate and coordinate the global use of radio spectrum and orbits for satellite use. A key part of this work is organising the World Radiocommunication Conference (WRC) every four years. The next one will take place in 2019.

While ITU itself has a long history, the WRC format was born in 1992. Prior to that, periodic World Administrative Radio Conferences (WARCs) were conducted to cover specific agenda items concerning particular radio services.

However, from 1992 onward, changes in the ITU constitution were made to convene regular conferences every three to four years. The change was made to keep up with rapid technological developments. In the process, opening the door for new applications.



What gets decided at the WRC?

The agenda of the WRC is decided by the preceding WRC and finally approved by the ITU Council two years before the conference, with the agreement of a majority of member states.

Under the terms of the ITU Constitution*, the WRC can:

- Change Radio Regulations and any associated frequency plans;
- Address any radiocommunication matters that have worldwide effects;
- Instruct the Radio Regulations Board and the Radiocommunication Bureau, and review their activities; and
- Decide what areas the Radiocommunication Assembly and its study groups should look at in preparation for future WRCs. What study groups do is explained in-depth starting on page 11.

In essence this means WRCs decide what and how spectrum and satellite orbits can be used by all radiocommunication services, including mobile networks (or International Mobile Telecommunications (IMT)).

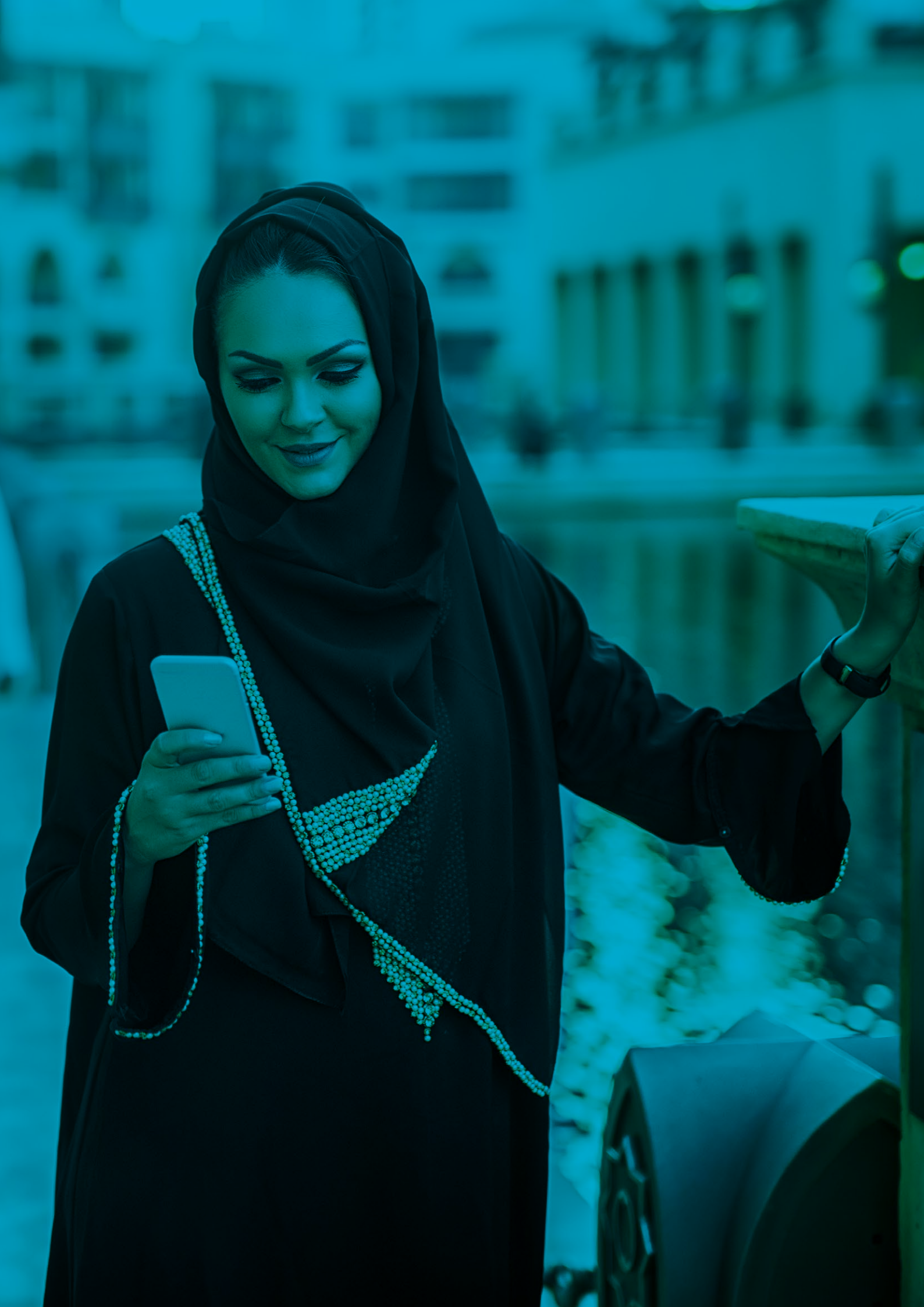
Favourable decisions regarding access to spectrum for mobile services help lay the groundwork for connecting millions more. For example, World Radiocommunication Conference 2015 (WRC-15) decided to make 700 MHz a globally harmonised band. A key step in making mobile broadband available to millions more.

What are the Radio Regulations?

The Radio Regulations are the end product of the WRCs. They are international treaties that are binding to ITU member states.

They define frequency allocations, technical and regulatory conditions for use of spectrum by a given service. Procedures for coordination are included in the regulations, which helps ensure compatibility. The Radio Regulations help prevent and resolve cases of harmful interference.

*<http://www.itu.int/en/history/Pages/ConstitutionAndConvention.aspx>







The preparatory process

The WRCs are both the end of a cycle and the beginning of a new one. The agenda for the WRC is decided at the previous conference together with a preliminary agenda for the subsequent one. It's open to as many issues as agreed on by the participants.

Here we take a look at the most important part of the preparation.

The Conference Preparatory Meetings (CPM)

The preparatory process starts and ends with a Conference Preparatory Meeting. They are there to make the decision-making at World Radiocommunication Conferences as informed as possible.

The 'Final Report' of the CPM outlines options for supporting or opposing the various WRC agenda items under consideration. The CPM Management Team and CPM Steering Committee make sure the work goes according to plan.

The first meeting takes place immediately following each WRC and the second one takes place about six months before the next conference. It goes without saying that the content of the Final Report plays a key role in what gets decided at the WRCs.

For the World Radiocommunication Conference 2019 (WRC-19) cycle, CPM19-1 was held in Geneva from 30 November to 1 December 2015. Participants from about 85 member states and sector members met to organise and coordinate the conference preparatory studies for WRC-19. CPM19-2 will be held in early 2019, in advance of WRC-19.



The ITU-R Technical Study Group work

The ITU-R Study Groups play a key role in the preparatory process. They guide the work done to ready the technical bases for decisions at the WRCs. There are six groups that cover different areas:

Study Group 1
(SG 1)



Spectrum
management

Study Group 3
(SG 3)



Radiowave
propagation

Study Group 4
(SG 4)



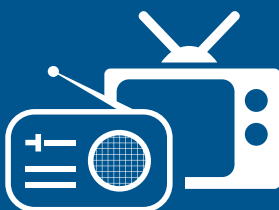
Satellite services

Study Group 5
(SG 5)



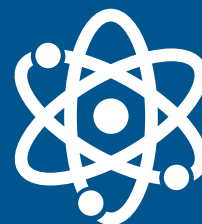
Terrestrial services

Study Group 6
(SG 6)



Broadcasting
service

Study Group 7
(SG 7)



Science services

According to the ITU, more than 4,000 specialists from administrations, the telecommunications industry as a whole and academic organisations across the world, participate in the work done by these groups.

Study Group 5

To understand the work that has now started ahead of WRC-19, let's take a closer look at Study Group 5, the group that focuses on terrestrial services. It is currently split into three Working Parties (WPs) and one Task Group (TG). The former are regular parts of this study group, while the task groups are formed with a specific purpose. Once the task is completed, they are disbanded.

Task Group 5/1 was formed to carry out studies on WRC-19 agenda item 1.13, which considers mobile allocations for certain frequency bands above 24 GHz. The addition of mobile allocations for high spectrum bands will help increase speeds significantly, but short propagation makes them a challenging proposition. At the same time, it may improve the opportunity for sharing between different technologies.

The task group will conduct sharing and compatibility studies, to see how well a mobile network in these bands could exist alongside, for example, satellite. Based on the studies, it will also write the section of the CPM report to provide technical bases on this important topic.

The group met for the first time in May 2016 to agree on a structure, develop a work plan and consider contributions. The structure is made up of four working groups that focus on different bands within the range covered by Agenda Item (AI) 1.13.

The six regional groups (APT, ASMG, ATU, CEPT, CITEL and RCC) all play a part in the work. To complete the work, TG 5/1 will meet a further three times in 2017 and once or twice in 2018.

APT

Asia-Pacific
Telecommunity

ASMG

Arab Spectrum
Management
Group

ATU

African
Telecommunications
Union

CEPT

European Conference
of Postal and
Telecommunications
Administrations

CITEL

Inter-American
Telecommunication
Commission

RCC

Regional
Commonwealth
in the field of
Communications

National and regional preparations

For anyone who wants to influence the decisions made at the WRC, national and regional preparations are a good place to start. Regional groups feed into the majority of the work completed ahead of each conference.

The positions of regional groups are informed by the work done at a national level. This is how Swedish regulator Post - och Telestyrelsen (PTS) presents its preparatory meetings on the organisation's website:

“Representatives from governments, businesses and organisations are all invited to participate, to submit information and views on the positions and proposals of each item on the WRC agenda. All interested parties are welcome to attend the meetings. The results of these meetings are used for developing Swedish positions and proposals for the European preparations.”

To sum up, here are three reasons why getting involved on a national basis, at an early stage, is a good idea:

- You can submit proposals via countries or to regional groups. The latter of which tends to have a lot more weight than individual country proposals;
- You participate in national discussions with other stakeholders, making it easier to anticipate discussions at the ITU and regional groups; and
- At the end of the day, the votes of individual countries determines the decisions at the WRC. For industry participants, access to national delegations gives them a chance to influence national positions as well as have “behind-the-scenes” discussions.

The ITU-R Inter-regional Workshops

Another integral part of preparations ahead of the WRC is the Inter-regional Workshops. Participants exchange views and hopefully a better understanding of the common views, positions and/or proposals.

Each WRC cycle includes workshops organised annually, with the last one taking place just before the conference.





Attending the WRC

The preparatory process is a means to an end; to get ready for the WRC meeting. The participating countries have four weeks to reach a consensus on the different agenda items.

How decisions are made

To understand how WRC decisions are made, it makes sense to first understand the conference structure. The structure, as well as the chairmanships, are discussed within an 'informal group' in the run up to the conference.

Anyone can take part in this process, but usually people who are really involved in the process take part. It's called an 'informal group' because the participants express their views as individuals and not as representatives of a country.

The chairs and vice chairs for the committees are proposed in this informal group based on factors such as background, experience and where the candidates are from, with a balance between different regions in mind.

The 'informal group' produces a document that gets discussed and approved with or without changes by the heads of the country delegations on the eve (usually a Sunday) of the conference. The chairman of the WRC is confirmed at this meeting together with the structure of the WRC. There are normally six committees, ranging from the Steering Committee chaired by the conference chair to others which deal with the agenda items, conference budget issues and credentials of the member states.

The chairman of the conference is responsible for the outcome of the WRC and chairs the plenary. The actual WRC workload is divided among a number of committees and working groups.

The Steering Committee coordinates all matters connected to the smooth execution. It plans the order and number of meetings. There are also committees that handle budget control and credentials.

However, the most important ones are the committees that handle the actual agenda items.

At WRC-15 there were three, with each one split into smaller working groups to handle the agenda items more efficiently. Keeping track of these is important because participating in working groups and committee meetings is the most effective method of influencing conference outcomes.

Once the official structure has been decided, the main work of the WRC begins through the Working Groups, Sub-Working Groups and sometimes smaller Drafting Groups; the number growing larger as the Conference goes on. Weekends and evenings are largely forgotten.

Industry lobbying groups, regional meetings and sub-regional meetings all take up time in a high-pressure month. Daily country delegation meetings each morning are crucial for coordination. Deals are done over coffee and in corridors as well as in the main meetings. Towards the end of the Conference, the plenary meetings – full of thousands of people – go on late into the night; vital breaks in between them are used for rapid coordination between key countries to find vital harmonised consensus.

Reaching consensus

Decisions are made when consensus on an issue has been reached through a delicate balance of compromise by differing countries. Each agenda item is discussed by the working groups in order to bring differing views closer together. This is then brought through the committees until a balanced agreement has been reached. The final sign-off is given by the plenary.

If a conference chair thinks a certain issue is especially complicated, he or she can decide to manage it directly by creating an ad-hoc group of the plenary.

The starting point for discussion is the input documents from the six regional groups, which is why it is so important to get involved in the regional preparations. If the influence is positive in this part of the decision-making process a lot of the work is already done.

In addition to regional documents, single countries or a group of countries can join forces to submit their own input. This is an opportunity for individual countries to make their voices heard, which is particularly significant if their views differ from the regional groups they participate in.

Private sector members and organisations can contribute information papers. The papers are also allowed to be presented at the conference, as long as the chair of the committee agrees to it.

Again, the input documents are where the discussion to reach consensus starts. At the conference, for each agenda item, each region appoints rapporteurs which present his or her region's take. On the side lines, the regional groups negotiate and compromise on their respective positions.

Member states, supported by industry, work throughout the month to achieve harmony and consensus. This is vital to support many communications services, including mobile. Where differences remain, issues are escalated to higher-level meetings. And while the end of the WRC is always a busy time trying to find balanced consensus, the meetings have enjoyed high success rates over their history.




Reaching consensus

The Final Acts are a record of the decisions taken at the WRC. They are made up of new and revised provisions of the Radio Regulations as well as the new and revised Resolutions and Recommendations approved by the conference.

Top tips: how to succeed

1. Advocate positions as much as possible at national and regional levels before the conference;
2. Find as much consensus as possible before the conference, and present that to regulators (as opposed to operators or vendors going to regulators individually);
3. Familiarise yourself with the process and structure of the conference to make it easier to follow the agenda items;
4. Know who you can ask for help on important issues;
5. Keep track of who is on your side and even more importantly who is not, on each issue; Getting to know the opposition and what can be offered is key;
6. Have fall-back positions ready if the optimum outcome can't be reached;
7. Don't assume that decisions are just rubber stamped by the plenary during the last couple of days; and
8. Manage energy levels. The WRC is a marathon, not a sprint: prioritising is key to a successful outcome.

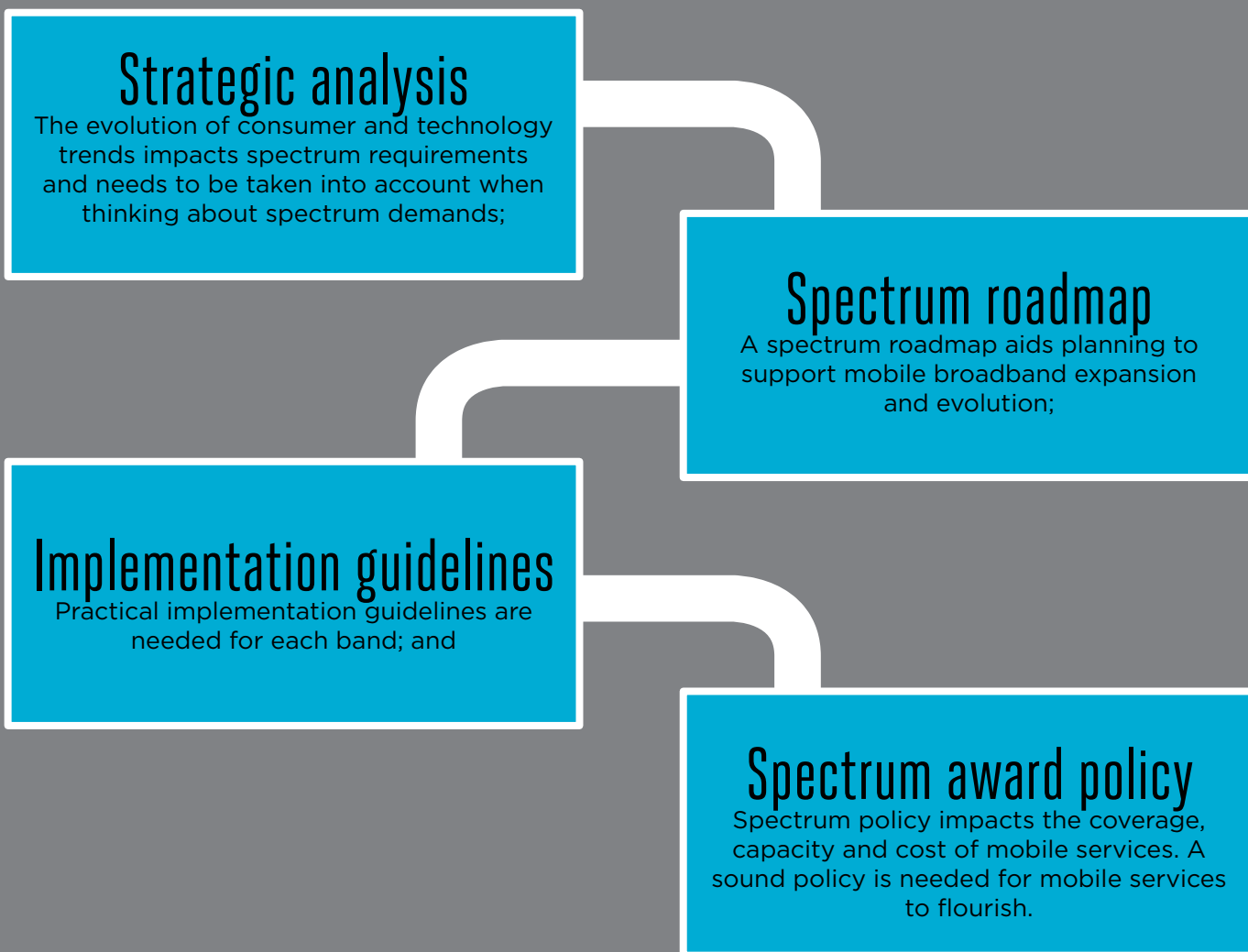


What happens
afterwards?

As important as Radio Regulations are, they are only the first step. National band plans are needed to dictate how the frequencies can be used.

Spectrum is a finite resource essential for so many vital communication services, but it holds no value until its use is fuelled by investment. To help regulators and governments assign spectrum detailed by the radio regulations, the GSMA's Spectrum Group suggests a process by which this can happen.

The process is split into four steps:



Timing is key to a successful spectrum roll-out. Too slow, and the market can't access the spectrum in a timely manner, and consumers will suffer. Too quick, and the ecosystem won't be ready and the financial investment will be difficult to manage for mobile operators.

Summary: why are the WRCs important?

- Rapidly increasing data usage is putting pressure on spectrum availability. Planning is needed to make sure we have sufficient spectrum for the future;
- The outcome of the WRC will be the single most important factor determining the future availability of spectrum. The WRC will make decisions on how spectrum is used during the next couple of decades;
- Spectrum identified at the WRC will not become available immediately. In some cases its commercial use has taken ten years or more;
- Where countries have an IMT/mobile broadband identification, its use is optional. However, countries should make efforts to give themselves that flexibility by identifying those bands for IMT use.
- It is vital that governments and national stakeholders in the WRC process to ensure the mobile industry in their country is supported to maximise broadband, ICT and thus economic growth.



Notes

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