

# The ‘INTERNATIONAL TELEGRAPH UNION’

## Its origin and further evolution

*Note: I am using the English abbreviation ‘ITU’; the original name, in French, is ‘UIT’ for ‘Union International pour la Télégraphie’.*

### 1.1. Forerunners (a)

In 1849 Austria and Prussia negotiated common telegraph standards and tariffs, and this was the very first international telecommunication meeting. (The term ‘telecommunication’ did not exist until 1904 - see below). It was the basis of the **Austro-German Telegraph Union (AGTU) [Deutsch-Österreichischer Telegrafenverein]** that was established on 25 July 1850 in Dresden.

In the following years, joining the founding nations of Prussia, Austria, Bavaria and Saxony were other German-speaking states: Württemberg, Hannover, Baden, Mecklenburg-Schwerin and the Kingdom of Lombardy-Venetia. Some states that had close relationships with these territories also joined the union: the Netherlands, the Duchies of Modena and Parma, Tuscany, and the Papal States

The first of the ‘mixed conferences’ took place in 1852 in Paris, involving Belgium, France and Prussia. The participants signed a wide-ranging convention to allow telegraph lines to pass frontiers without interruption, which recognized the right of every individual to use the international services (the use of Morse telegraphs was mandatory), upon payment of charges at the point of origin, and guaranteed the privacy of telegrams, although only governments could use ciphers.

The three countries met on several occasions and in Paris, on 29 December 1855, this led to the creation of the **West European Telegraph Union (WETU)**. In addition to the three founding countries, it was subsequently joined by eleven further states: Denmark, Luxembourg, Portugal, Sardinia, the Sicilies, Spain, Sweden and Norway, Switzerland, Turkey, Russia, and the Papal States. From the private sector, the submarine cable companies of Algeria, Corfu, and Malta also agreed to follow its rules.

Meanwhile, these joint activities among the members of the Austro-German and the Western European telegraphic unions made it increasingly clear that a merger was needed. This was proposed by WETU at its meeting in 1857, and it invited AGTU to a conference to be held in Berne the following year with the aim of creating a single telegraphic union covering Europe. Although AGTU did not attend, it asked the Swiss hosts of the conference to prepare a document that would be common to all states. The resulting Berne Convention, signed on 1 September 1858, included almost all the provisions of the Brussels Convention, to which Prussia was a party. Thus, AGTU was able to accede to it in 1859. Uniformity across the continent was approaching for telegraph services, but it had not yet been achieved.

These agreements led to the very important foundation of the **International Telegraph Union** at a conference in Paris on 17 July 1865 during the International Telegraph Convention; this makes the ITU one of the oldest intergovernmental organizations in the world.

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### 1.2. The International Telegraph Convention and foundation of the International Telegraph Union (b)

In Paris, on the left bank of the Seine, stands an imposing mid-nineteenth-century building: the Quai d’Orsay. Since 1853, it has been the home of France’s Ministry of Foreign Affairs, and has hosted visits by heads of state and countless dignitaries from around the globe. One of its most sumptuous rooms, the ‘Salon de l’Horloge’ (Clock Room) is lit by huge chandeliers beneath a gilded ceiling, while above an ornate fireplace, a statue symbolises France itself. Into this glittering venue, on 17 May 1865, stepped a distinguished gathering to sign an agreement forming the world’s first modern international organization: the International Telegraph Union. They had been invited to France by the nephew of Napoléon Bonaparte, Emperor Napoléon III, inspired by the beliefs of the time in scientific progress and free trade.

The representatives of twenty mostly European countries (see the list below) met under the chairmanship of France’s Foreign Minister Édouard Drouyn de Lhuys, who explained that the aim was to rationalise the handling of burgeoning international telegraphic traffic. A general treaty was proposed for this purpose, and because this would need to be signed by national authorities, the United Kingdom was the only European country with an extensive telegraph system that did not participate in the conference: its networks were

privately owned, rather than state-run as in most of Europe at that time. But it was felt that, in practice, the UK would follow the terms of the treaty.

This push to modernise France, and to increase its influence in Europe and beyond, led Napoléon III to propose the world's first International Telegraph Conference, which began on 1 March 1865.

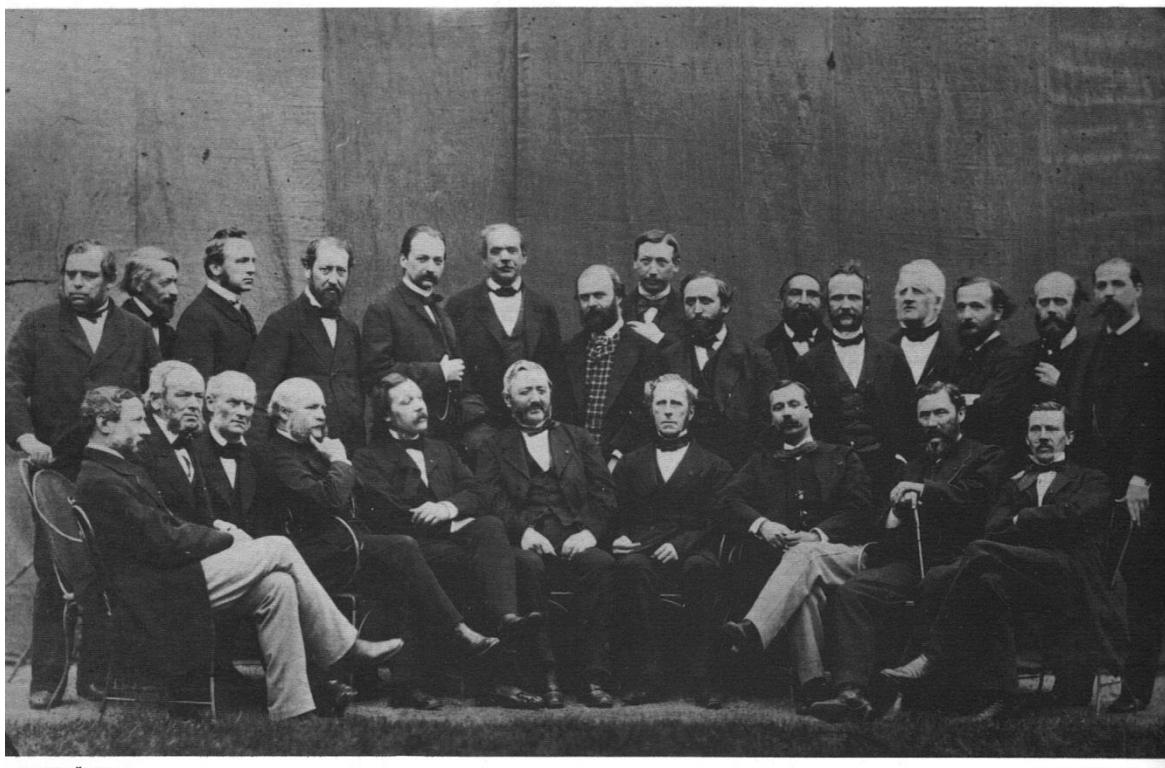
Drouyn de Lhuys noted that the agreements then in force - the 1858 Brussels and Berne Convention - had become insufficient to deal with the advance of telegraphy. International telegrams might be subject to multiple sets of regulations that were not wholly uniform.

The committee of special delegates met sixteen times to thrash out the details of the International Telegraph Convention, and the final draft was presented to the conference at its second session on 13 April. It contained pioneering provisions. These included the introduction of a standard charging system in each country as a whole, rather than by area (with the exception of part of Prussia and the remotest territories of Russia and Turkey). Importantly, a table of tariffs for cross-border messages was annexed to the treaty, and this would considerably reduce the price of telegrams. In addition, a set of Regulations for International Service had been prepared to stand alongside the treaty.

It also established in art.3 the use of the Morse and Hughes telegraphs on international lines; a rare instance of ITU specifying particular equipment.

The third and final session of the conference took place on **17 May 1865**, when the final documents of the first International Telegraph Convention were formally signed. That date is recognized as the birth of the International Telegraph Union – the precursor of today's ITU – and is marked each year as World Telecommunication and Information Society Day.

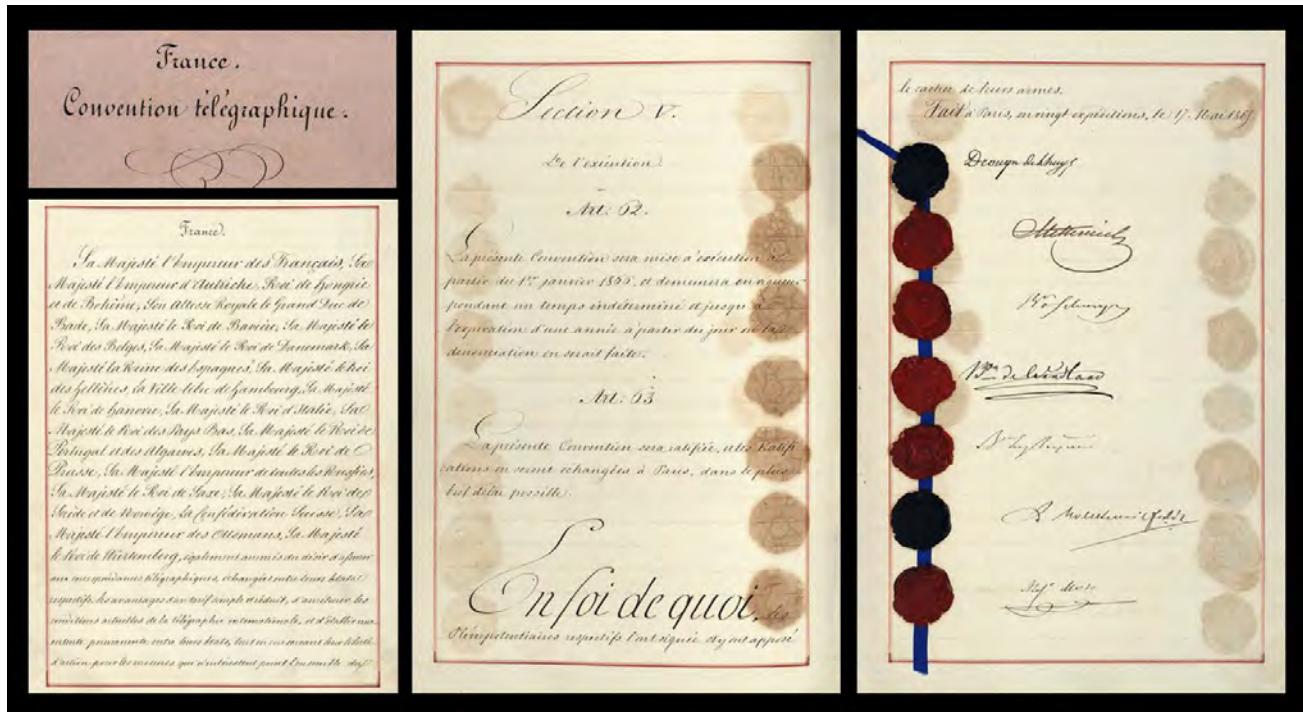
## CONFÉRENCE TÉLÉGRAPHIQUE INTERNATIONALE PARIS 1865.



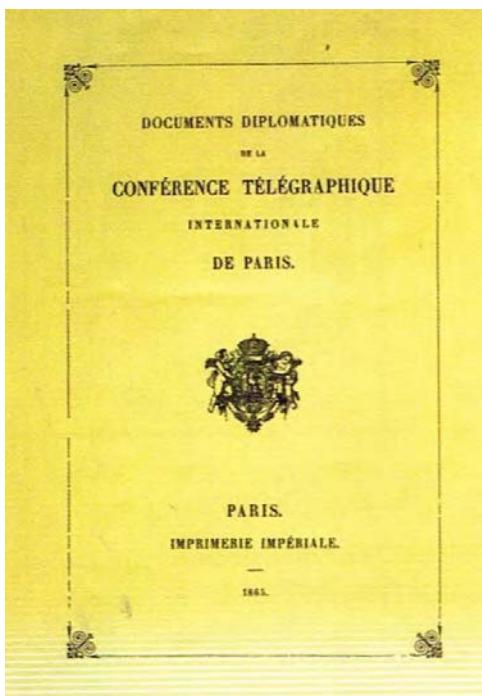
FERNIQUE \* PHOT.

31, RUE DE FLEURUS, PARIS

Danemark	Bavière	Norvège	Wurtemberg	Belgique	Portugal	Secrétaire	Suisse	Bade	Turquie	Prusse	Italie	Grèce	Secrétaire	Espagne	
Faber	de Weber	Nielsen	de Klein	Vincent	Damasio	de Lavernelle	Curchod	Poppen	Agathon	Hendi	de Chauvin	Minetto	Manos	Dupré	de Hacar
Pays-Bas	Bavière	Hanover	France	Belgique	France		Suède		Espagne	Russie					
Staring	de Dyck	Geuss	Jagerschmidt	Fassiaux	Vte de Vougy		Brandström		Sanz	G' Mjr de Guerhard					



## Extracts from the first 'International Telegraph Convention'



Nevertheless, the telegraph treaty was signed by all. Summarizing the achievement of the conference, Drouyn de Lhuys said:

*"We have met here as a veritable Peace Congress. Although it is true that war is frequently caused by a mere misunderstanding, is it not a fact that the destruction of one of the causes makes it easier for nations to exchange ideas, and brings within their reach this prodigious means of communication, this electric wire which conveys thoughts through space at lightning speed, providing a speedy and unbroken link for the scattered members of the human race? Countries that participated in the 1865 International Telegraph Conference."*

The Convention and its Regulations came into effect on 1 January 1866. The treaty was introduced with a statement by its signatories that they were united in their desire to ensure that telegraphic communications between their countries would benefit from "a simple and reduced tariff," and that the conditions for international telegraphy would be improved. The signatories also stressed that they would establish a "permanent agreement" between their nations, while not interfering with decisions on matters unrelated to the international telegraphic service.

The ‘gold franc’ was accepted as the monetary unit for all international accounts.

The significance of the International Telegraph Convention cannot be overstated. For the first time, regulations, tariffs, and technology were harmonized across all of Europe, as far as its borders with Africa and Asia.

The wider effects upon international relations were also noted. Just before 1865, some signatory states had been at war; the second conflict between Schleswig-Holstein and Denmark had ended the previous year, having also involved Prussia and the Austria.

The participating countries were:

<i>Country in 1856</i>	<i>Country or Countries today</i>	<i>Country in 1856</i>	<i>Country or Countries today</i>
Austrian Empire	Austria and Hungary	Grand Duchy of Baden	Germany
Kingdom of Belgium	Belgium	Kingdom of Denmark	Denmark
Kingdom of Spain	Spain	French Empire	France
Kingdom of Greece	Greece	Free City of Hamburg	Germany
Kingdom of Hannover	Germany	Kingdom of Italy	Kingdom of Italy
Kingdom of the Netherlands	The Netherlands	Kingdom of Portugal	Portugal
Kingdom of Prussia	Germany	Russian Empire	Russian Federation
Kingdom of Saxony	Germany		
United Kingdoms of Sweden and Norway	Sweden and Norway	Swiss Confederation	Swiss Confederation
Ottoman Empire	Turkey	Kingdom of Württemberg	Germany

Great Britain was not involved in the work; the reasons were more political than technical because telegraphy was in the hands of private companies, unlike telegraph services in Western Europe.

In 1866 the Vatican and the Grand Duchy of Luxembourg also joined.

Standard regulations and uniform tariffs were established, and the use of encrypted (secret) messages was now also accepted. Somewhat special was the fact that there was now a standard for the use of semaphores, relating to the signalling (with flags) between shore and ship. It therefore allowed the transmission of telegrams from shore to ships that were still in sight. Another novelty was the introduction of "registered" telegrams. Morse and Hughes were made compulsory as international transport equipment.

Furthermore, here in Belgium the cost of ordering the telegram from the user was cancelled and for the first time payment orders were allowed to be sent by telegram.

Note that the International Telegraph Union was the first international institution in the field of communications. Then came the Universal Postal Union in 1874, and it was only in 1882 that the first International Railway Conference was held in Berne.

### 1.3. From the International Telegraph Union to the International Telecommunications Union

Since the establishment of the ITU in 1865, many important international meetings have taken place. As this is outside the scope of this article, I refer the reader to the ITU website, for example. So let me jump to the important year - 1932 - but not before I mention that in 1906 the International Radiotelegraphic Union was established during the first International Convention on Radiotelegraphy in Berlin.

Between 3 September and 10 December 1932, a joint conference of the International Telegraph Union and the International Radiotelegraph Union convened in order to merge the two organisations into a single entity, the **International Telecommunication Union**. The Conference decided that the Telegraph Convention of 1875 and the Radiotelegraph Convention of 1927 were to be combined into a single convention, the International Telecommunication Convention, embracing the three fields of telegraphy, telephony and radio.<sup>[1]</sup>

#### About the word *telecommunication*.

It was in 1904, while he was director of the 'École Professionnelle des Postes et Télégraphes', that Edouard Estaunié published his lecture notes in the book « Traité Pratique de Télécommunication Électrique (Télégraphie, Téléphonie) ». He coined the new word telecommunication from Greek "tele": far; and Latin "communicare": to make contact.

The ITU defines it as : 'Telecommunication is the transmission of signs, signals, messages, words, writings, images and sounds or information of any nature by wire, radio, optical or other electromagnetic systems'.

## 1.4. Later years

After World War II, the United States took the initiative in encouraging the same spirit of international cooperation that had prevailed at the first convention of the International Telegraph Union in 1865. It proposed that the government of the USSR should invite the other four of the Big Five victorious powers - China, France, the U.K., and the United States - for a conference in Moscow. This conference took place in **1946**, and important proposals were made to bring the ITU into close association with the newly established United Nations (UN) and form an elected permanent administrative council.

The first Plenipotentiary Conference of the ITU was held at Atlantic City, N.J., in **1947**. The 600 delegates came from 76 countries and had to decide on the proposals made in Moscow. The language question was solved in such a way that now, in alphabetic order, the official languages of the ITU are Chinese, English, French, Russian and Spanish. English, French, and Spanish are the working languages, and “in case of dispute, the French language shall be authentic”.

Concerning the relation with the UN, it was agreed that to safeguard the “technical and universal” tasks independent of political influences, the ITU became the “specialised telecommunications agency” of the UN. Instead of Berne, Geneva was chosen as the new seat for the secretariat of the ITU, mainly because French-speaking Geneva was a subsidiary headquarters of the UN.

At the Atlantic City conference, a new International Frequency Registration Board (IFRB) was created.

The IFRB was given the difficult task of securing efficient and orderly use of the frequency spectrum so as to avoid interference between the various radio services, especially between the radio services of the different countries. The frequency spectrum was extended to 10,5 GHz and an International Frequency List was introduced with these classifications: notification (demand) and registration (authorisation).

A major task of the ITU has always been to promote recommendations for the standardization of telecommunications services, operation, performance, and maintenance of equipment, systems, networks, and services. Adherence to the recommendations guarantees interconnectivity and interoperability on a global scale of networks, systems, and equipment from various operators and manufacturers.

In **1957**, in view of the basic similarity of many of the technical problems, the two International committees for telegraphy (CCIT) and for long-distance telephony (CCIF) merged into a new *International Telegraph and Telephone Consultative Committee*, officially the “Comité Consultatif International Télégraphique et Téléphonique” (CCITT).

In **1959**, at an administrative radio conference in Geneva, the frequency allocations of the radio spectrum were extended to the range from 10 kHz to 40 GHz.

In the 1990s, the ITU came under great pressure from about 80 specialised forums, interest groups, and organisations active in telecommunications standardisation. These included the ATM Forum, the Frame Relay Forum, the GSM Association, the Internet Engineering Task Force, the UTMS Forum, and many others. Those structures served regional interest or specific technologies and applications. Most significantly, the rapidly emerging Internet was based on global standards that had been developed mainly outside the ITU. In **1992**, the ITU improved its efficiency by reorganizing the standardization work, as shown in the table below [4].

**ITU Reorganization of the International Standardization, 1992**

Old	New
CCITT	ITU-TS (Telecommunication Standardization)
CCIR	ITU-R (Radio Communication)
CCITT/R Recom.	ITU-T Recommendation
CCITT Secretariat	TSB (Telecommunication Standardization Bureau)
CCITT Study Groups	ITU-TS Study Groups TSAG (Telecommunication Standardization Advisory Group)
CCITT Plenary Assembly	WTSC (World Telecommunication Standardization Conference)
International Frequency Registration Board (IFRB)	Radio Regulation Board

### 1.5. A brief chronological overview of some of the most important conferences (d)

- 1879: London- Administrative Conference including **telephony**
- 1903: ITU begins to draft regulations for **international telephone service**
- 1903: First efforts to regulate **maritime radio communications**
- 1903: London - Preliminary conference concerning **wireless telegraphy**, nine nations attend including U.S.
- 1906: Berlin ‘**radiotelegraph**’ conference - 29 member countries form the “*International Radiotelegraph Union*”
- 1920: Washington- Preliminary World Conference on **electrical communications**
- 1924: Creation of the CCIF (\*) in Paris (*Comité Consultatif International pour la Téléphonie*)
- 1925: Creation of the CCIT in Paris (*Comité Consultatif International pour la Télégraphie*)
- 1927: Creation of the CCIR in Washington (*Comité Consultatif International pour la Radiotélégraphie*)
- 1932: Madrid- Joint **telephone and radiotelegraph** conference and creation of the **International Telecommunications Union**, the **ITU**, spanning **radio, telephone, and telegraph**.
- 1946: Move of the headquarters from Berne to Geneva
- 1947: The ITU becomes a Specialized Agency of the United Nations. Only sovereign countries become full members, one vote per country independent of size
- 1956: Geneva- CCIF and CCIT merges into **CCITT** (*Comité Consultatif International Télégraphique et Téléphonique*).
- 1992: Geneva - **ITU-T** replaces CCITT; **ITU-R** replaces IFRB; and **ITU-D** replaces TCD (CDT?)
- 2015: The 150th anniversary of ITU was celebrated at the Quai d'Orsay in Paris

(\*): In ‘CCIF’ the F was for Telephony, perhaps because at the time Germany was quite important for Telephony and F was for Fernsprecher (German for telephone).

### 1.6. An anecdote.

I had the opportunity to participate in several meetings of the CCITT in the 1970s and 1980s. CCITT was the name of the umbrella under which all the study groups were active. It stands for “Comité Consultatif International Télégraphique et Téléphonique”, which can be translated as “Consultative Committee for International Telephony and Telegraphy”. [We used to explain it as being the abbreviation of ‘Conversation Committee for International Talk and Travelling’...]

I was attached to ‘Study Group 1 Special A’ and had only the status of ‘observer’; so I could not directly contribute and had no right to vote. My function was to accompany and advise, if possible, the delegation of the participating members of our Belgian PTT (which was a big customer of the company I was working for). So I attended the very interesting meetings of the ‘Special Study Group Data Transmission’, later renamed ITU-T Study Group XVII, that dealt with the then-important issues of “data transmission”. That was essentially the making of the recommendation for modems (V-27 for 4800 bit/s modems; V-29 for 9.600 bits/s, V-32 for 14.400 bit/s, V34... )

### 1.7. The ITU today (e)

#### 1.7.1. General

By means of a system of conferences, including the Plenipotentiary Conference held every four years, the ITU coordinates the shared global use of the radio spectrum, promotes international cooperation in assigning satellite orbits, works to improve telecommunication infrastructure in the developing world, and assists in the development and coordination of worldwide technical standards. The ITU is active in areas including broadband Internet, latest-generation wireless technologies, aeronautical and maritime navigation, radio astronomy, satellite-based meteorology, convergence in fixed-mobile phone, Internet access, data, voice, TV broadcasting, and next-generation networks.

The agency also organizes worldwide and regional exhibitions and forums, such as ITU Telecom World, bringing together representatives of government and the telecommunications and ICT industry to exchange ideas, knowledge and technology. (I had the pleasure to be several times the manager of the booth of our company).

ITU, based in Geneva, Switzerland, has 12 regional and area offices in the world and has been an intergovernmental public-private partnership organization since its inception. Its membership includes about 200 Member States, around 800 public and private sector companies, and academic institutions, as well as international and regional telecommunication entities.

#### 1.7.2. A word about the three ITU Study Groups (a)

- **ITU-T (ex CCITT) ; STANDARDISATION:**

Standardisation was the original purpose of ITU since its inception. This sector standardizes global telecommunications (except for radio). Its mission is to ensure the efficient and timely production of standards covering all fields of Telecommunications and Information Communication Technology (ICTs) on a worldwide basis, as well as defining tariff and accounting principles for international telecommunication services. The international standards that are produced by the ITU-T are referred to as "Recommendations" (with the word capitalized to distinguish its meaning from the common parlance sense of the word "recommendation"), as they become mandatory when adopted as part of a national law.

- **ITU-R (ex CCIR); RADIocommunication:**

This group develops the technical bases for decisions taken at World Radiocommunication Conferences (WRC), as well as global standards ('Recommendations'), More than 5.000 specialists from administrations, the telecommunications industry as a whole, and academic organizations throughout the world, participate in the work of the Study Groups on topics such as efficient management and use of the spectrum/orbit resource, radio systems characteristics and performance, spectrum monitoring, and emergency radiocommunications for public protection and disaster relief.

Under the terms of the ITU Constitution, a WRC can: revise the Radio Regulations and any associated Frequency Assignment and Allotment Plans and address any radiocommunication matter of worldwide character. At the time of writing (29 September 2019), the next WRC (the 19<sup>th</sup>) will be held at Sharm el-Sheikh, Egypt, from 28 October to 22 November 2019.

Study Group 1 deals with Spectrum Management; Study Group 3 with Radiowave Propagation; Study Group 4 with Satellite Services; Study Group 5 with Terrestrial Services; Study Group 6 with Broadcasting Service; and Study Group 7 with Science Services.

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On 24 May 2004, the 160th anniversary of the first public Morse telegraph transmission, the Radiocommunication Bureau of the International Telecommunication Union (ITU-R) formally added the @ ("commercial at" or "commat") character to the official Morse character set, using the sequence:

• [REDACTED] [REDACTED] • [REDACTED] •  
(mnemonic: AC: an A • [REDACTED] with a C-circle [REDACTED] • [REDACTED] • around it)

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- **ITU-D (ex TCD); DEVELOPMENT:**

This sector helps spread equitable, sustainable and affordable access to information and communication technologies. It is responsible for creating policies and regulations, and providing training programs and financial strategies in developing countries.

### 1.7.8. Miscellaneous

Founded in 1865 to facilitate international connectivity in communications networks, the ITU today allocates global radio spectrum and satellite orbits, develops the technical standards that ensure networks and technologies seamlessly interconnect, and strives to improve access to ICTs to under-served communities worldwide. Every time you make a phone call via the mobile, access the Internet or send an email, you are benefiting from standardisation work of the ITU.

The monument ‘Glory of Telecommunications’ , erected for the International Telegraph Union, ITU's ancestor, which was based in Berne from 1865 to 1946.



The ITU headquarters in Geneva



**'World Telecommunication Day'** has been celebrated annually on 17 May since 1969. As we have seen above, the date marks the anniversary of the founding of ITU on 17 May 1865, when the first International Telegraph Convention was signed in Paris. In 1973, the event was formally instituted at the ITU Plenipotentiary Conference in Malaga-Torremolinos, Spain. Every year a topical theme is chosen and events celebrating that theme take place around the world.

*See more on this in my article “TELECOM CELEBRATION DAYS” in this chapter.*

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- [3] FROM SEMAPHORE TO SATELLITE - published by the ITU - 1965 - 343 p.
- [4] THE WORDWIDE HISTORY OF TELECOMMUNICATIONS - Anton HUURDEMAN - 2003 - 637 p.

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- (a) <https://www.itu.int/en/history/Pages/Pre1865Agreements.aspx>
- [a] [https://en.wikipedia.org/wiki/International\\_Telecommunication\\_Union](https://en.wikipedia.org/wiki/International_Telecommunication_Union)
- (b) <https://www.itu.int/en/history/Pages/ITUBorn1865.aspx>
- [c] [https://en.wikipedia.org/wiki/International\\_Telecommunication\\_Union](https://en.wikipedia.org/wiki/International_Telecommunication_Union)
- (d) <http://bnrg.cs.berkeley.edu/~randy/Courses/CS39C.S97/regulation/regulation.html>
- (e) [https://en.wikipedia.org/wiki/World\\_Information\\_Society\\_Day](https://en.wikipedia.org/wiki/World_Information_Society_Day)

And many more...

### THANK YOU

Andy EMMERSON, President of the Telecom Heritage Group in the UK, and a good friend, for some hints.

My friend Bill BURNS for having corrected (again) my ‘Flemish(Dutch) English. People with interest in the history of the Atlantic Cable & Undersea Communications must check his great website:  
<https://atlantic-cable.com>

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### ADDENDUM

What follows is an added bonus for postcard and/or stamp collectors:

Some of the many postcards issued by countries in 1965 to commemorate the centenary of the ITU.  
Most of them are with commemorative postal stamps.

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