Key Themes

ICTs in other sectors

Spectrum and Satellites

Cybersecurity

Broadband

Emergency telecoms

Digital Divide

Cloud Computing & Big Data

Cloud computing

Big data

"A paradigm for enabling network access to a scalable and elastic pool of shareable physical or virtual resources with on-demand self-service provisioning and administration."

Source: Recommendation ITU-T X.1601: *"Security framework for cloud computing"*, http://itu.int/ITU-T/X.1601

"High-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making." [Gartner]

ITU is working on big data's impact on telecom operators, especially in terms of new services and applications.

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The Aviation Cloud – Cloud and big data in the Aviation Sector

- Support real-time monitoring of flight data

- Increase operational and environmental efficiency of commercial aircraft

  - Predict maintenance needs

  - Route optimization

  - Reduce airport stacks

- Better informed travelers

- Potential secondary use of some data, e.g., climate science and meteorology

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Challenges associated with Cloud Computing and Big Data

Technical, regulatory and policy issues

- Interoperability, standards
- Vendor lock-in
- Reliability & Liability
- Security (integrity, availability, authenticity, non-repudiation)
- Privacy
- Access policy
- Ownership of data
- Geographical location of data storage

Cost and business models

All require thoughtful analysis, consideration and action

ITU and its membership are in an opportune position to address these challenges.

Privacy in Cloud Computing

ITU-T Technology Watch Report
March 2012

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ICAO Special Meeting on Global Flight Tracking, Montréal, 12-13 May 2014

"n)   ICAO should encourage States and International Telecommunication Union (ITU) to take action, at the earliest opportunity, to provide the necessary spectrum   allocations as emerging aviation needs are identified. This includes spectrum for satellite and radio services used for safety of life aviation services. ICAO encourages ITU to place this on the Agenda for the upcoming ITU World Radio Conference 2015;"

ITU-R studies on systems to provide global flight tracking

- **Working Party 5B** – Maritime mobile service including Global Maritime Distress and Safety System (GMDSS); aeronautical mobile service and radiodetermination service

    - Current meeting: 19 – 30 May 2014

- **Working Party 4C** – Efficient orbit/spectrum utilization for MSS and RDSS; performance issues related to RDSS

    - Next meeting: 25 June – 1 July 2014

Automatic dependent surveillance-broadcast (ADS-B)
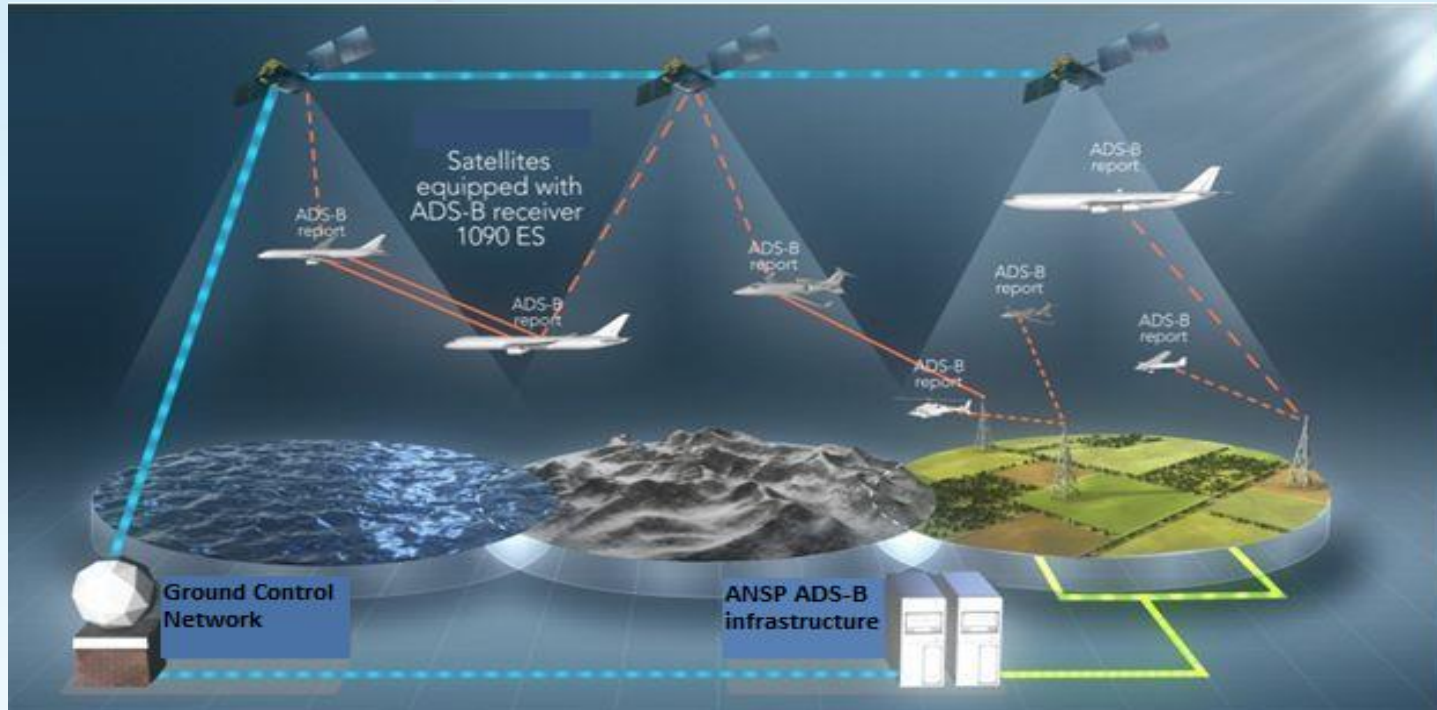
- 1 090 MHz for the aeronautical mobile-satellite (R) service (AMS(R)S) (no frequency allocation exists in the Radio Regulations)

- Other implementations through satellite systems operating in satellite-allocated spectrum

Automatic dependent surveillance-contract (ADS-C)

- Automatic dependent surveillance-contract (ADS-C) provides a two-way communications function with ATC ground systems, including the transmission from the aircraft of ADS-C reports.

- ADS-C relies on the establishment of contracts between an aircraft and the ATC ground system. An ADS-C contract is an agreement between ground and aircraft systems as to how and when the aircraft will transmit ADS-C reports to the ground. ADS-C reports are generated by the aircraft system in response to commands, called contract requests.

- ADS-C is currently supported by satellite networks operating within the 1.5/1.6 GHz bands for AMS(R)S.

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# Some of these options may need spectrum allocations in the Radio Regulations (RR)

The **Radio Regulations** incorporate the decisions of the World Radiocommunication Conferences (WRC).

"**1.36** *aeronautical mobile-satellite (R)* service:* An *aeronautical mobile-satellite service* reserved for communications relating to **safety** and regularity of flights, primarily along national or international civil air routes.
* (R): route."

"International Treaty"

Frequency block allocations to defined radio services (Article 5).

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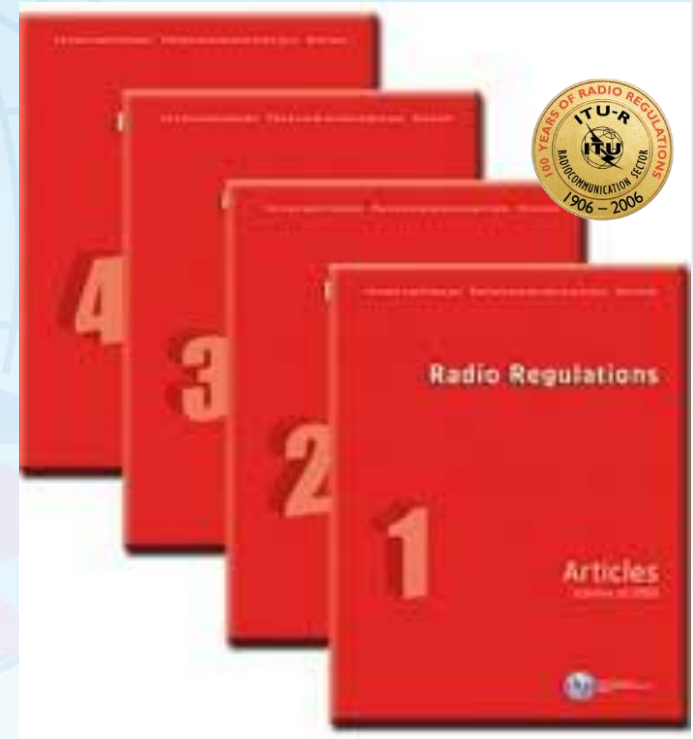
World Radiocommunication Conference (WRC)

- ITU-R process to provide for spectrum allocations

- Updates the Radio Regulations (treaty status)

    - Spectrum Allocation

    - Notification procedures

    - Administrative and operational procedures

- Adopts Resolutions

- Held every 3-4 years
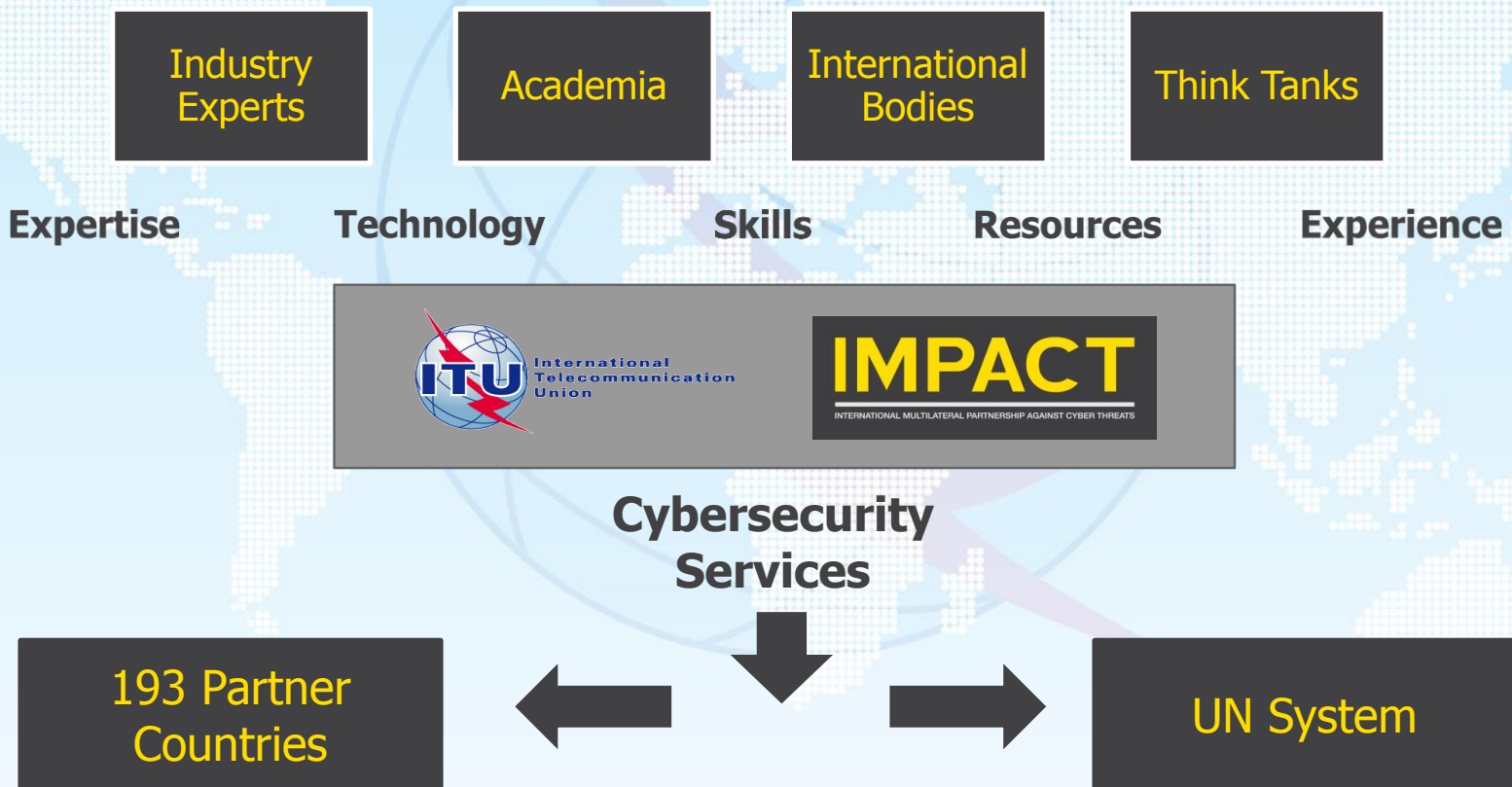
    - WRC-15

    - WRC-19

- http://www.itu.int/ITU-R/go/wrc

WRC
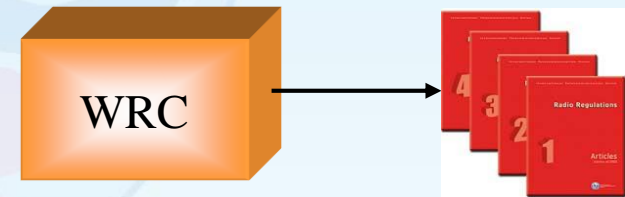
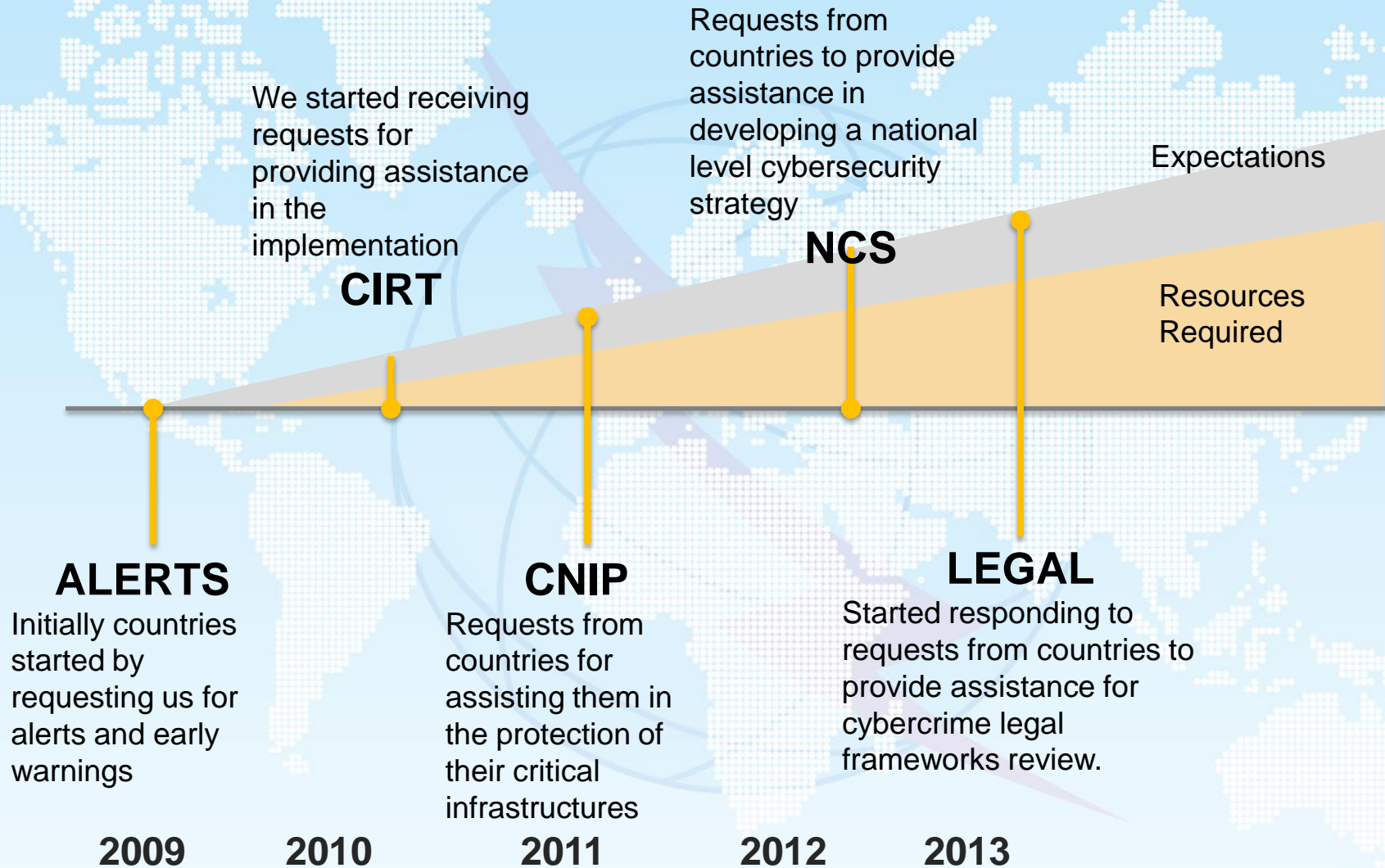Committed to connecting the world

ITU-IMPACT: A Global Coalition

The International Multilateral Partnership Against Cyber Threats (IMPACT) is a key strategic partner of the United Nations' specialised agency - the International Telecommunication Union (ITU) – bringing together governments, academia and industry experts to enhance the global community's capabilities in dealing with cyber threats.

Industry Experts	Academia	International Bodies	Think Tanks

Expertise　　**Technology**　　**Skills**　　**Resources**　　**Experience**

Cybersecurity Services

193 Partner Countries	← →	UN System

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149 NATIONS

HAVE JOINED THE COALITION.

ITU-IMPACT IS TODAY, THE **LARGEST GLOBAL CYBERSECURITY ALLIANCE**

Global platform to build cybersecurity capabilities
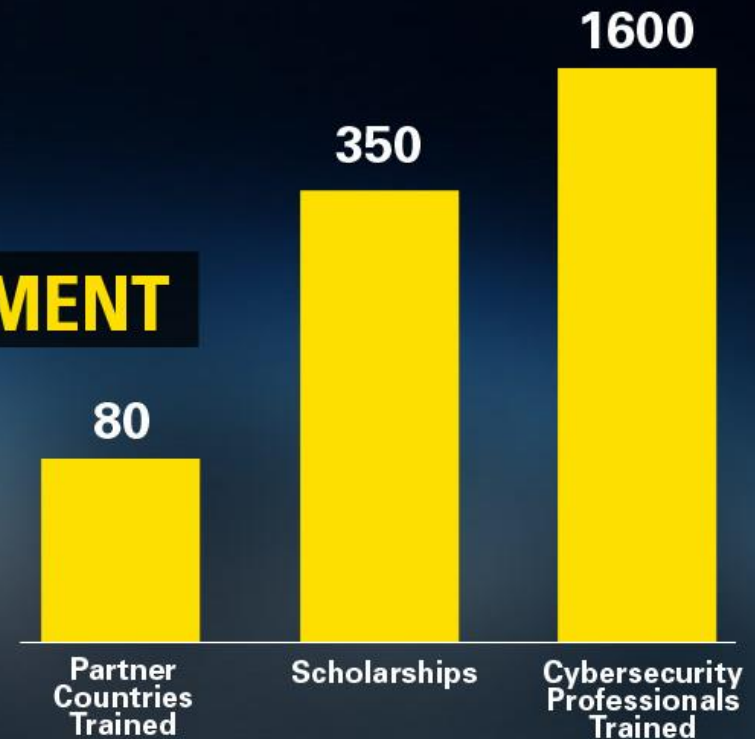
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TRAINING AND SKILLS DEVELOPMENT

1600 CYBERSECURITY PROFESSIONALS TRAINED

350 SCHOLARSHIPS

80 PARTNER COUNTRIES TRAINED

80 — Partner Countries Trained
350 — Scholarships
1600 — Cybersecurity Professionals Trained

Global delivery of capacity building workshops and programmes

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ITU-IMPACT Achievements

COMPUTER INCIDENT RESPONSE TEAM (CIRT)
ASSESSMENTS AND IMPLEMENTATIONS
STRENGTHENING REGIONAL CYBERSECURITY CAPABILITIES

ITU-IMPACT National CIRT Assessment
ITU-IMPACT National CIRT Implementation

50+ National CIRT Assessments – Seven National CIRT Implementations

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APPLIED LEARNING FOR EMERGENCY RESPONSE TEAM (ALERT)
CYBER DRILL AND CYBERSECURITY WORKSHOP

ASIA PACIFIC

ARAB

EUROPE AND CIS

AMERICAS

Asia Pacific
Arab
Europe and CIS
Americas

menu

Regional Cyber Drills for National CIRTs in Four Regions

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many thanks !

1865
2015

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The three pillars of ITU:

Radiocommunication
Standardization
Development

ITU-T Standardization

Develop interoperable, international standards (ITU-T Recommendations)

Bridge standardization gap

Cooperation among standardization bodies

ITU-R
Radiocommunication

Develop global regulations for spectrum and satellite orbit resources

Establish harmonized, global standards for wireless systems

Assist membership develop advanced radio-com systems

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Why Standards?

International Standards essential in a complex world

Essential for international communications … and global trade

Drive competitiveness… efficiency, responsiveness and innovation

Standards provide interoperability and economies of scale

Lower prices and increase availability by reducing technical barriers and promoting compatibility between systems and networks

Manufacturers, network operators and consumers benefit

All ITU-T Recommendations are freely available

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