RIPE NCC
RIPE NETWORK COORDINATION CENTRE

ITU and IoT

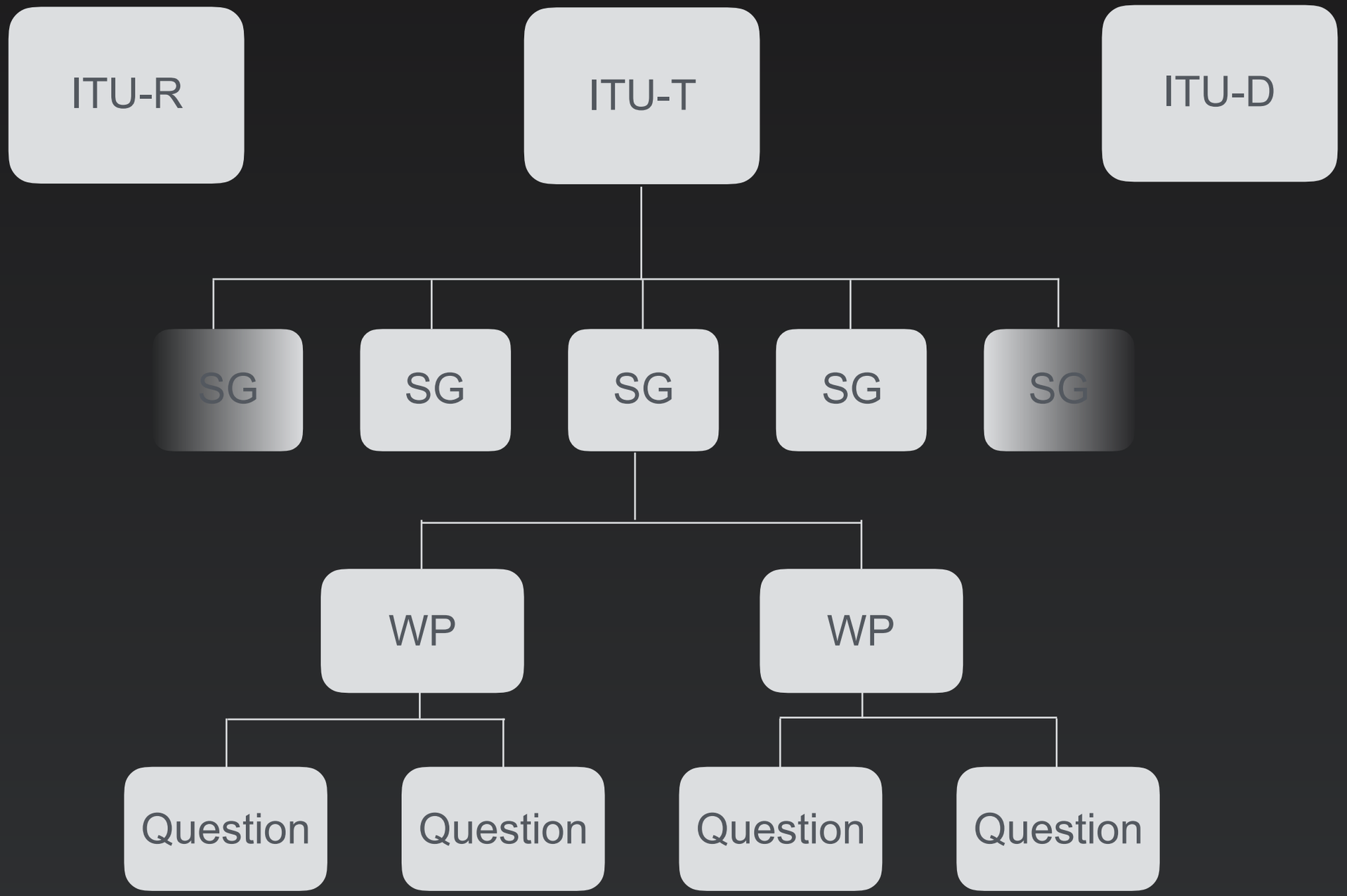
Update on SG20's March 2017 Meeting

Marco Hogewoning | May 2017 | RIPE 74

ITU Structure

International Telecommunication Union

ITU Structure



Study Group 20 (Period 2013-2016)

- “Internet of Things, smart cities and communities” (established in 2015)
- Q1: Research and emerging technologies including terminology and definitions
  - WP1: Internet of Things
    - Q2: Requirements and use cases for IoT
    - Q3: Functional architecture, signalling and protocols
    - Q4: Applications, services, End User networks and interworking
  - WP2: Smart Cities and Communities (SC&C)
    - Q5: SC&C requirements, applications, services
    - Q6: SC&C infrastructure and framework

Study Group 20 (Period 2017-2020)

- Working Party 1
  - Q1: End-to-end connectivity, networks, interoperability, infrastructures and Big Data aspects related to IoT and SC&C
  - Q2: Requirements, capabilities and use cases across verticals
  - Q3: Architectures, management, protocols and Quality of Service
  - Q4: e/Smart services, applications and supporting platforms
- Working Party 2
  - Q5: Research and emerging technologies, terminology and definitions
  - **Q6: Security, privacy, trust and identification**
  - **Q7: Evaluation and assessment of Smart Sustainable Cities and Communities**
- Regional Groups: AFR, ARB, EECAT, LATAM

New question Q6/20

- “Security, Privacy, Trust and Identification for IoT and SC&C”
  - Very broad descriptors, took a while to define Terms of Reference for this Question
  - Potential for overlap on other Questions and Study Groups is significant, avoiding duplication (and competition)
  - Identify risks, threads and mitigation techniques
  - Authentication technologies in relation to identification
  - **[…] identification of IoT objects, in particular non IP based and non web-based objects […]**

IPv6 Related Work Items

- There are two recommendations and one supplement being drafted:
  - Y.IPv6RefModel "Reference Model of IPv6 Addressing Plan for Internet of Things Deployment”
  - Y.IPv6-suite "Reference Model of Protocol Suite for IPv6 Interoperable Internet of Things Deployments”
  - Y. IPv6-IoT Supp."IPv6 Potential for the Internet of Things and Smart Cities”
- Originally started under Q1/20
  - Now moved under Q3/20 (management, protocols)

IPv6 and Identification?

- Common misconception that IP addresses can or should be used as a permanent identifier
  - In practice it often is the only lead available
  - In non-IT address and identity also have a relation
  - Many do not understand the relation with routing

- Decision to move the drafts to Q3/20 was challenged by Q6/20 because of this
  - Text inserted in WP1 report now reads: “[…] In the future meetings other aspects related to IPv6 identification based on input contributions can be addressed in Q6/20.”

Future of IPv6 Drafts?

- Y.IPv6RefModel originally posted for consent during the March 2017 meeting
  - Changes in structure and reallocation causing delays
  - Questionable if current text is “mature” enough
  - Text was not opened for lack of contributions (and time)
- Our earlier liaison response was confirmed
  - In summary, we argued the ITU-T was not an appropriate venue for this work, which should be developed bottom up
  - Response reads “[…] and notes the concerns raised in the statement.”

Digital Object Architecture

DOA at Layer 8

- Politically still a controversial topic
  - ITU has a MoU with the DONA Foundation
  - This debate sits well above Study Group level
  - Some delegations might say the ship has sailed
- Few manufacturers are present in SG20
  - Possibly a case of betting on all the horses
- A number of governments give strong support
  - Buying in on a promise of a better world?

DOA at Technical Levels

- DOI exists and works (ISO standard)
  - But for a very specific purpose: libraries and documents
  - Even RFCs have a DOI assigned
  - Handles system is used to resolve DOI
- DOA does not exist
  - It is a very abstract description of a possible solution
  - With sufficient time and money it might work
  - At which point it probably gets us to where we are now

DOA discussions at SG20

- Many proposals make reference to DOA
  - Also a number of them simply refer to “an identifier”
- All are very high level “reference architecture”
  - Very hard to argue on technical arguments
  - There is no code or protocol to scrutinise
  - Maybe it works, maybe it doesn’t
- Have to work on this at a higher level
  - Leave options open for competing standards and solutions
  - “Use the right tool for the job”

Liaisons and More

- “When the only tool you have is a hammer”
  - DOA is a possible solution to many problems
  - IoT is the big promise
- Anything can be brought into scope
  - Stick a piece of silicon in it or give it an antenna
  - It also usually moves you in somebody else’ area
- Planes, trains and automobiles…
  - You can of course use LoRa and DOA on a drone
  - But does that make it a topic for SG20?

RIPE NCC and SG20

- IPv6 work items
  - The ITU remains an inappropriate venue for this
  - Make sure results are in line with our policy
  - Stay on top of “IPv6 as identification” topic
- Community concerns about DOA
  - Get to grips with the subject matter and monitor
  - Do our bit in keeping things open to other standards

AIOTI

Alliance for IoT Innovation

- Now an independent Belgium Association
  - Fully separated from European Commission
  - High level strategy retreat last week
  - Waiting for reports and updated roadmap
- Ongoing work items
  - Identifier task force investigating industry needs
  - RIPE community was also invited to respond to survey
  - Results are being processed and discussed
- Continue to monitor work in other groups

Questions?

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