



**Council of European National  
Top-Level Domain Registries**

# Report on **IETF107**



**Virtual Meeting**  
**23-27 March 2020**

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## Meeting virtually – not an easy one

The cancelling of the face-to-face meeting of the IETF on short notice initially met with a few critical comments. However, since the number of Covid-19 cases nearly doubled over the IETF week, any criticism was short-lived.

### What worked

IETF Chair Alissa Cooper reported that an estimated 701 individuals from 39 countries participated in the virtual sessions, with “between 82 and 235 people participat[ing] in each of the working sessions and 282 people join[ing] for the plenary.”

The IETF 107 leadership had allocated two to three meeting slots a day to new working groups (WG), and existing working groups were relegated to organising their own virtual interims. Some of the BoFs probably had a higher participation than they would have in a regular meeting.

From a technical standpoint, the sponsorship from Cisco enabled IETF to use Webex for the meeting. By and large it worked well, but as the chat function in WebEx was used to manage the queue, participants reported a much heavier use of the Jabber chats during sessions in the after-chats on the attendee e-mailing list.

### What worked less well

The parallel discussions going on in WebEx and Jabber did not allow WG Chairs to feel the temperature of the room in the way they would have normally been able to. The Jabber and minute scribes have however promised to try to include the relevant commentary from both discussion tracks into the meeting minutes.

Some of the sessions became rather abbreviated and general. The BoFs did not proceed to the typical BoF questions, and the general exchange of views seems to be more difficult online. The Adaptive DNS Discovery (ADD) WG serves as an example of how the virtual format did not lend itself to encouraging discussions on how to move forwards (see our related [blogpost](#)).

Organisationally, the online meeting made it a little more difficult to become aware of pop-up side meetings. Some individual side-meetings did, for

example, take place without being on the official virtual agenda, namely the ‘New IP’-related side-meeting (see the graph about that hot topic further down).

Recordings of all official sessions are available via the IETF [website](#) and on the IETF [YouTube channel](#).

### Online future in times of Corona

The RIPE meeting in May will be held online only (and possibly limited to one day), and the next IETF meeting in July is expected to also become an online meeting, potentially with changes to the format.

In her [blogpost](#) on IETF107, Cooper has written that for now: “The IESG and the IETF LLC are working together to plan for future meetings in light of the ongoing pandemic”. One item that will be discussed for sure is how the IETF will handle the cost of remote participation in the future, especially when more meetings have to be put online. Meanwhile Cooper announced that a decision on the July meeting would be made by 15 May 2020.

A number of the regular WG meetings, like DPRIVE and DNSOP, that were shuffled back to give the slots to new WGs and BoF meetings (to allow them to get organised and start their work) will take place in the coming weeks. The agenda can be found [here](#).

## Hot topic on the sidelines: new IP

With the agenda derailed, planned side meetings were mostly cancelled. However, some still were held, even if they were not well advertised: for the debate about “new IP”, suspicious minds might consider that the lack of announcements was intentional.

A general dispute about the Huawei-driven initiative about a new (post) IP network standard has been simmering for some time. Members of an ITU-T Focus Group on Technologies for Network 2030, a group established in 2018 by ITU-T Study Group 13, have now presented a proposal ahead of the World Telecommunication Standardization Assembly (WTSA, planned in India from 17-20 November 2020) to ramp up ITU-T’s work on a follow-up protocol for TCP/IP. The declared motivation for the work are the shortcomings the Focus Group perceives with regard to high-capacity applications of car-to-car

communications to holographic transmissions.

## Anti-Chinese media stir or authoritarian dreams?

A long [Financial Times article](#) at the end of the IETF week stirred more media coverage and public debate around some aspects of proposed features of “New IP”, which some say has nothing to do with IP at all. The most problematic aspects that have been noted in a variety of presentations on the topic (from Huawei and Futurewei researchers and developers) are a permanent-looking electronic ID (eID), that can optionally be transmitted encrypted, and the integration of functions of a network provider, ID manager and accountability manager in a more integrated (less layers) network. Shoshana Zuboff, author of the bestseller “Surveillance Capitalism” is quoted in the FT article: “Of course [China] want a technological infrastructure that gives them the absolute control which they have achieved politically, a design that matches the totalitarian impulse”, adding that this “is frightening to me and it should be frightening to every single person”.

Milton Mueller, Georgia Tech, rejected the FT article as a typical anti-China storyline and opined that new IP was, for one, not a new but an ongoing debate, and after all only a research project. This very argument is also made by Richard Li, CTO at Futurewei, Chair of the responsible ITU Focus Group. In an email to the author, Li underlines the research nature of New IP. Higher demand for capacity and bandwidth from new applications (holographic content) and different network types (satellite communications) drove the considerations, according to Li. With regard to concerns over fixed IDs and shutdown commands, Li points to prior IETF work as a source for both the locator-identifier split (pertaining to eID) and to the shut-down command (the DOTS WG is mentioned as one source). Shutdown commands came out as a result of discussions in DOTS (and so the fight against DDoS).

Here is an extract from Li’s email: (...) EIDs and New IP are two separate topics. And “shutdown” command is not even part of New IP. The terms eID and “shutdown” can be traced back to IETF RFCs and its working group discussions. As far as I know, IETF has been standardizing some security-related identifier features, for example, IETF LISP and Cisco’s

Implementations. The “shutdown” command is not a feature of New IP at all, but it traces back to IETF DDoS Open Threat Signalling (DOTS) when DOTS tried to solve the DDoS problem in order to protect the network against DDoS attacks.

Li also underlines that New IP was not fully baked and that it would definitely interoperate with TCP IP.

Several aspects have to be explored though. In fact the proposal to WTSA (TSAG-C133) does not speak of research only, but suggests that related ITU-T study groups (SG13, SG17, SG11 and SG20) should “set up new Questions (Q) to discuss the future-oriented technologies which push the current research further”. The study groups are expected to produce standards in the regular ITU-T process if possible.

Yet another pointer that the push is taken seriously might be the fact that the European Regulators’ Group (which coordinates preparatory work for WTSA) in their upcoming session in May has included New IP on their agenda.

## ETSI creating its own Non-IP Networking Working Group

Interestingly, ETSI, the European Telecommunication Standards Institute, just this week announced “the creation of a new Industry Specification Group addressing Non-IP Networking (ISG NIN)”. According to the press release the kick-off-meeting took place on 25 March, and John Grant, BSI, was elected as the ISG Chair, while Kevin Smith, Vodafone, was elected as ISG Vice Chair. Similarly to the ITU-T New IP work, the first deliverable is a report about the shortcomings of IP (especially with regard to 4G and 5G, for which TCP/IP was “deemed as non-optimal”). The new group has evolved from the ETSI Next Generation Protocols Group, created in 2015. Private mobile networks such as factory automation could be the first “customer” of ISG NIN. In the press release, Smith says: “The IP stack and OSI layer model have undeniably enabled global connectivity - but since they originated in the 1970s, their design reflects the demands and capabilities of that era. Reassessing the fundamental design principles of network protocols offers the opportunity to deliver performance, security and efficiency gains for 2020 access networks and use cases, and may be achieved with simplification rather than expensive add-ons. The work of ETSI ISG NIN, in co-operation with industry organisations, can

provide operators with a cutting-edge protocol suite to add to their service portfolio”.

## Reactions

The IETF rebuked the effort answering a liaison statement from the ITU-T, warning that a “top-down design effort to replace the existing IP protocol stack wholesale would be harmful”. The IETF asserting its lead in IP standardisation in the rebuttal demonstrates that it sees no reason why the existing IP protocol suite cannot be evolved to meet the challenges. Support for the IETF position has been expressed inside the ITU-T preparatory WTSA work, e.g. by RIPE NCC and British RTFM company (known by many through its founder Jim Reid).

## More HTTP: RIPT, WEBTRANS

[The “lure” of HTTP](#) (Patrick McManus) is motivating more and more new WGs to migrate applications to HTTP transport. As previously reported, one step towards an HTTP future could be a development to make VoIP yet another “HTTP app”.

### WebTransport instead of WebSockets: Which transport?

However, a different approach would be web transport. It is supposed to allow constrained applications to sit on top of the web protocol while not being constrained to open single data streams between the client and server like the WebSockets that are currently being used. WebTransport aims to allow for multiplexed streams once a connection (“connect” stream) is established. The option would also help to prevent head-of-line blocking. The WebTrans WG, which met for the first time during the virtual meeting, included authors from Apple and Google and drew many of the “usual suspects” from the web developer community at the IETF.

Atop the issue the WG has to decide upon is which transport will be the chosen stratum for WebTransport, with HTTP2, HTTP3 and Quic all on the table. Whilst many are considering a potential fall-back to TCP necessary to allow backward compatibility, there is also an idea to just allow for a fall-back to WebSockets instead.

The complexity and operational cost of the different variants (HTTP3, HTTP2, Quic) were discussed,

and the need for practical latency tests for the different variants was considered as a possible way forward. Results on numbers could help in choosing a maximum of two out of four different transport options. Just after the meeting, the WG started a WG last call on the requirements document.

Possible overlaps with the work of RIPT and MASQUE were considered. MASQUE addresses the issue that, by moving traffic to Quic/HTTP3, there is a need to change from the proxy model (used for example when a VPN provider is used) to the application multiplexing mechanism on top of HTTP3. After handshake authentication several connections can be run inside the Quic connection, and several proxies inside that could even be used, according to the respective demand of the application.

## DRIP WG: Legislators faster than developers for once

Registration and live identification of unmanned aerial vehicles (UAVs or “drones”) has become a top priority for regulators on both sides of the Atlantic. With both EASA and the FAA mulling over new registration rules, the Drone Remote ID Protocol WG wants to finalise the architecture and requirements draft by July, a rather ambitious timeline.

The working group is the brainchild of a partnership between AX Enterprize, a New York-based software consultant company (recently awarded a \$7.7M contract by the Airforce Research Laboratory to study how to safely integrate drones into the military and civilian National Airspace System) and long-time IETF participant and consultant Robert Moskowitz. Together they have put together both a requirements and an architecture draft.

The declared aim is to fill gaps in the F3411-19 standard of the American Society for Testing and Materials (ASTM), a US-based, and now international standards body. The ASTM has so far focused on broadcast retrieval of drone ownership/pilot data via Bluetooth but since the US regulator has made a network version of data access obligatory as well, the IETF is a new natural partner.

The current proposal points to HIPv2 and its DNS extensions. With only minor additions to the IETF protocols (new crypto algorithms for HIP) remote ID

for both the broadcast and the network model could be supported, the authors say. Existing standards like RDAP or EPP from the DNS space could be reused for data registration and live querying of owners/pilots of drones over the internet.

The advantage of layered access to data about a drone and its owner/pilot is the prevention of private data leakage, for instance as relates to drone pilots or the business models of commercial drones (Walmart and Amazon could theoretically spy on each others' delivery strategies or customer bases). Under the proposed privacy model, only police or firefighters or other legitimate requesters should be able to access information about drones and drone pilots.

The current EASA approach (article 14 of the draft implementing regulation) obliges all drone owners/pilots to have clear name registries in a way that contradicts the GDPR, the US authors said. They hope that access to a data protection-by-design solution for UAV identification and authorisation will help European regulators turn around.

## Glimpses from the dispatch meetings

### Nomcom eligibility in Corona Times

The virtual IETF meeting saw two dispatch meetings. The General Dispatch meeting addressed a Corona-crisis-related problem: the question of eligibility for the NomCom. Due to the current rules, candidates for the IETF nominating committee need to be present at 3 out of the five most recent IETF meetings. A special document (edited by former IAB Chair Brian Carpenter) will make these rules more flexible. An intense debate about the issue started even before the IETF virtual meeting on a dedicated mailing list.

### Indicators of compromise

The Co-Chair of the ongoing SMART side meetings, Kirsty Paine (National Cyber Security Centre/GCHQ), presented a draft document on Indicators of Compromise (IoC) in what she said was an effort to share information between the Anti-Malware/LEA community and the IETF community to encourage operators to allow visibility/manageability of these IoCs in their networks and applications (either by

endpoint security or network-based defence).

Possible indicators of defence listed in the draft are: IP addresses, domain names, TLS Server Name Indicator values, certificate information, signatures such as binary code patterns and strings, hashes of malicious binaries or scripts, attack tools, such as mimikatz [Mimikatz], attack techniques, such as Kerberos golden tickets [GoldenTicket].

The draft also purports that such IoC information should be shared via dedicated platforms for cyber defence.

Reactions to the draft were mixed. While several participants called it interesting work, many recommended to make it an independent stream submission instead of an IESG-reviewed document. Possible follow-up discussions could nevertheless take place in the MILE WG on the OPSEC mailing list or in SAAG.

The <https://github.com/smart-rg>, started by the NCSC, together with former Security AD Kathleen Moriarty, has unsuccessfully tried to set up an IRTF group for several years now. The group had side meetings during recent IETF meetings and brought the NCSC CTO in for one of the better attended meetings. The IRTF Chair has obviously not agreed to a formal IRTF group.

## Brand new IAB and other bits from the Administrative Plenary

During the virtual plenary [incoming](#) IAB chair Mirja Kuehlewind (Ericsson) received several questions on openness. In particular access to starting IAB programs garnered attention, and while several IAB members including Kuehlewind herself welcomed ideas for new IAB programs, including with external experts, the IAB is also in the process of discussing how it will organise the work program in the future.

Kuehlewind pointed to another challenge she is facing at the beginning of her term, with close to 50% of the IAB members being new to the board, and the fact that face-to-face meetings are currently not an option due to the COVID-19 crisis.

The turnover seems in part to be the result of the RFC editor stepping down. By some in the community this was seen as a consequence of mismanagement

from the IAB and there is speculation that this might have been a reason for Ted Hardie not to run for a second term.

Together with Hardie (Google), Martin Thomson (Mozilla), Eric Nordmark (Zededa), Brian Trammell (Google), Christian Huitema (independent), Melinda Shore (Fastly) are leaving the IAB. Kuehlewind will be joined by Ben Campbell (independent), Cullen Jennings (Cisco), Jared Mauch (Akamai), Tommy Pauly (Apple), and Jiankang Yao (CNNIC).

In news from the IETF newcomers, for the first time, a Facebook employee (Murray Kucherawy) joins the IESG as an AD for the ART area. It is interesting to note that, whilst there is a good representation from the web and mobile sectors, there is not such a high turnout of people with experience of classical DNS operation.

(For all new faces, see the [plenary slides](#)).

**IETF108 is due to be held in Madrid from 25-31 July 2020. A final decision on the venue (virtual or Madrid) will be taken by 15 May.**



CENTR is the association of European country code top-level domain (ccTLD) registries, such as .de for Germany or .si for Slovenia. CENTR currently counts 54 full and 9 associate members – together, they are responsible for over 80% of all registered domain names worldwide. The objectives of CENTR are to promote and participate in the development of high standards and best practices among ccTLD registries. Full membership is open to organisations, corporate bodies or individuals that operate a country code top level domain registry.

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