

NMRG Virtual Meeting

25 September 2020

Chairs: Jérôme François, Laurent Ciavaglia
Secretaries: Jéferson Nobre, Pedro Martinez-Julia



Goals of the IRTF

The IRTF conducts research ; it is not a standards development organization

The Internet Research Task Force (IRTF) focuses on longer term research issues related to the Internet

The Internet Engineering Task Force (IETF) focuses on shorter term issues of engineering and standards making

While the IRTF can publish informational or experimental documents in the RFC series, its primary goal is to promote development of research collaboration and teamwork in exploring research issues related to Internet protocols, applications, architecture, and technology.

See “An IRTF Primer for IETF Participants” – [RFC 7418](#)

IRTF follows IETF policies

This is a reminder of IETF policies in effect on various topics such as patents or code of conduct.

It is only meant to point you in the right direction. Exceptions may apply. The IETF's patent policy and the definition of an IETF "contribution" and "participation" are set forth in BCP 79; please read it carefully.

As a reminder:

- By participating in the IETF, you agree to follow IETF processes and policies.
- If you are aware that any IETF contribution is covered by patents or patent applications that are owned or controlled by you or your sponsor, you must disclose that fact, or not participate in the discussion.
- As a participant in or attendee to any IETF activity you acknowledge that written, audio, video, and photographic records of meetings may be made public.
- Personal information that you provide to IETF will be handled in accordance with the IETF Privacy Statement.
- As a participant or attendee, you agree to work respectfully with other participants; please contact the ombudsteam (<https://www.ietf.org/contact/ombudsteam/>) if you have questions or concerns about this.

Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- <https://www.ietf.org/privacy-policy/> (Privacy Policy)

Virtual Meeting Etiquette

Please remember that **sessions are being recorded**

Please also:

- **Keep yourself muted** unless you are speaking
- If you want to speak/comment,
 - In the Webex chat, type:
 - 'RH' (Raise Hand)
 - 'LH' (Lower Hand)
 - Respect the line i.e. speak when it's your turn; the Chairs will manage the queue
 - State your name
 - Stay to the point, be concise and precise

Useful links

- Agenda: <https://datatracker.ietf.org/doc/agenda-interim-2020-nmrg-05-nmrg-01>
- Materials: <https://datatracker.ietf.org/meeting/interim-2020-nmrg-05/session/nmrg>
- Webex: <https://ietf.webex.com/ietf/j.php?MTID=m3bddb464f73ee2f71b89c7efd758eed>
- Notes: <https://codimd.ietf.org/nmrg-online-20200925#>
- Recording: WebEx recording will be available after the meeting
- Attendance: please add your name at the bottom on the Notes page (<https://codimd.ietf.org/nmrg-online-20200925#>)

Agenda

1. 16:00 - 05 min – Meeting logistics and agenda, Chairs
 2. 16:05 - 15 min - Status on Research Challenges in AI for NM document
 3. 16:20 - 15 min - Status on Intent Classification, Olga Havel, draft-irtf-nmrg-ibn-intent-classification
 4. 16:35 - 15 min - Status on IBN Concepts and Definitions, Alex Clemm, draft-irtf-nmrg-ibn-concepts-definitions
 5. 16:50 - 15 min - IBN - Use Cases, Jéferson Nobre
 6. 17:05 - xx min - Miscellaneous / Open discussion
 - Other I-Ds
 - IETF 109 Hackathon
 - Scouting (new/emerging research questions, technologies...)
- 18:00 - end of meeting

Future meetings

Online interim in October?

November 2020, IETF 109, *Online*

- A 2hr session
- Several RG milestones
- Virtual Hackathon...?

March 2021, IETF 110, Prague

- Consultation about moving to online meeting. DL for comments: Sep. 28th
- Majority of feedback suggest going for online meeting

Until further notice, the default mode of operation will increasingly rely on:

- [Monthly Virtual Meetings](#)
- [Mailing list](#)
- [Collaborative platforms \(e.g. Github, Google Docs, etc.\)](#)

Do not hesitate to share your questions, ideas or needs with the groups or chairs !

Agenda item #2

Research Challenges in AI for NM document

- https://docs.google.com/document/d/1dQOzZustl2mkYr_omtiqu3FqUvoqLgaCp7nbRj4ZJyw/edit?usp=sharing
- Thanks to the (future) contributors : 5+ contributors
- Introduction / motivation of the document
 - Difficult problems in NM (where AI can help) before objectives of IA in NM (new proposed section)
 - Scalability / accurate issues with heuristics techniques (NP-hard problems)
 - Bottleneck of human-based operations
 - ...
 - Examples provide: resource allocation, traffic forecasting, intent interpretation
 - Goals of AI in NM
 - How should this section should be articulated with the previous one?
 - How to organize this section? Classification of objectives per layer ? (but need also to have transversal objectives). Use the NSM taxonomy (from COMSOC/CNOM, IFIP)? Try to identify important list of attributes that characterize of goal ?
 - Other ideas ?

Agenda item #2

Research Challenges in AI for NM document

- Challenge description
 - Lightweight AI : Embed AI algorithms
 - Problem type and mapping: “define the right algorithm for a certain problem” □ too strict. Need first to **define parameters** that impact the selection of an algorithm to formulate correctly a problem incl. constraints + method to find a good tradeoff
 - Automated network data labelling: for supervised learning, fill the gap between collecting data and feeding the ML algorithms, mapping of labels and objectives is not 1:1
 - Online monitoring and control of the quality and properties of estimators: when the learned model are not accurate anymore?
 - IBN-1: interpreting high-level or natural language intents (NLP/NER) and generation of intents (may intent can be generated from current operations? Can it help for diagnosis?), in relation with human in/on the loop challenge
 - IBN-2: planning of actions to produce the desired outcome

Agenda item #2

Research Challenges in AI for NM document

- Next steps
 - Continue discussion through particular meetings and emails between identified contributors
 - Comments to be discussed and addressed
- Format
 - Draft? (good for the visibility of the group and contributors)
 - Continue with shared doc?

Agenda item #3

Status on Intent Classification

Agenda item #4

Status on IBN Concepts and Definitions

Agenda item #5

IBN Use Cases

IBN Use Cases

- Work plan item #5:
*" Define appropriate validation scenarios and use cases describing concrete examples of intent expressions and functions.
Goal: assess the quality and completeness of specifications and evaluate intent-based systems functionalities in experimental settings."*
- Considerations
 - Use cases of interest: e.g. on 5G/Network Slicing, Enterprise/DC networking and operations, Smart-x (-home, -city...)
 - Definition of guidelines, common structure, expectations, use case template
 - Connection with Intent Classification

Opinions...

Next steps...

Agenda item #6

Miscellaneous / Open discussion

Other I-Ds

IETF 109 Hackathon

Scouting (new/emerging research questions, technologies...)

Opinions...

Next steps