University of Glasgow

School of
Computing Science

Formal Languages Side Meeting

23 September 2020
Virtual Side Meeting

Logistics

- Mailing list:
  fdt@ietf.org
  https://www.ietf.org/mailman/listinfo/fdt

- Etherpad:
  https://pad.riseup.net/p/fdt-230920

- The meeting is being recorded and minuted, with the attendee list noted: will circulate on the list after the meeting

Agenda

- Introductions (as required)
- Charter text outline
- Charter text bashing
- Discussion
  - Engagement
  - Meeting cadence & next meeting

Introductions

- Who you are
- Why you're here
- What formal languages projects are you interested in or working on

Charter text

https://codimd.ietf.org/s/Sy3hUYRmP

Background

- The incremental, distributed, and consensus-driven standards development process adopted by the IETF can lead to standards documents that contain inconsistencies and ambiguities. A significant cause of this is the use of natural language and unstructured diagrams to describe protocols, both in the development process, and in the documents themselves. Formal description techniques could help to overcome the shortcomings of natural language, allowing for the precise, unambiguous description of protocols. A significant body of academic work exists, and many formal languages and techniques have been defined. However, such techniques see limited and slow adoption within the IETF. Understanding the cultural, social, and technical reasons for the slow adoption of formal description techniques would ultimately allow their use to be encouraged, leading to standards that are more trustworthy and secure.

- Where formal description techniques do see adoption within the IETF, groups often arrive at similar challenges and problems (e.g., protocol evolution). Beyond encouraging the adoption of FDTs, a strong link should be developed between groups that are using them, and between the IETF and the academic community, to share knowledge and learning.

Objectives

- An FDT (formal description techniques) research group would seek to:
  - survey the existing body of work on formal description techniques and tools for interoperability-centered standards
  - identify areas and groups of the IETF where FDTs have seen adoption, and seek to understand and characterise the impact, benefits, and challenges that result from this adoption
  - study the cultural and social barriers to the adoption of FDTs in the IETF
  - study the technical barriers to the adoption of FDTs in the IETF, identifying the necessary or desirable tooling integrations, and where necessary, developing and prototyping tooling
  - bridge the gap between the academic community that is working of FDTs, and their practical use in the IETF
  - provide a resource that can be used by IETF groups considering use of FDTs, to help facilitate take-up and best practice where appropriate

Organisation

- An FDT research group would have open participation, with the main communication channel being a public mailing list. We would seek to have at least one meeting per year at the IETF, with additional meetings co-located with relevant academic conferences and workshops.

Discussion

Engagement

- Standards community
  - Relevant people and groups
  - Engagement model: what resources to provide, how to facilitate adoption, …
- Academia
  - Relevant people and venues

Meeting logistics

- Meeting cadence: more regular as we try to build up a community?

- Next meeting