Research Proposal

My work is a part of ongoing research focused on the geopolitics of emerging technologies. My special focus is standardization of Internet of Things (IoT), which I started to research during my Master's degree at University College London (UCL). Within my Master's thesis I have analyzed the level of policy coordination [1] at the oneM2M group [2] through the analysis of the data accessible at oneM2M data portal (list of Work Items, daily activity logs). In a current state, this study is not exhaustive as it covers only one Standards Development Organization (SDO), and I am keen to extend it and add a case study of the Internet Engineering Task Force (IETF) stakeholder networks related to IoT industry. The main aim for both case studies is to determine the level of coordination there is amongst stakeholders in standards development for IoT industry and how stakeholders may use this coordination to exercise influence by advancing certain interests.

For oneM2M analysis I used data analysis (network mapping of WIs, analyzing trends and patterns within daily logs) and interviews (set of the interviews with the most active Rapporteurs and members of the Technical Plenary and Steering Committee). I would like to do the same for IETF, but with different samples of data, and I am considering this workshop as an opportunity to learn and develop new tools for the analysis.

To complete the analysis similar to the one I did for oneM2M, I will need to have access to the minutes of IoT Working Groups (WGs) of IETF, mail archive of the members of IoT WGs and lists of attendance for the meetings of these WGs. I had an idea to include this whole analysis in my master's dissertation, but due to the very limited timing and me not being fluent with coding, I decided that BigBang toolkit was too complicated and time-consuming at that point. The main tools I was looking at, which would be relevant for my research were Network Analysis, IETF Attendance, Working Groups Affiliations, and several experimental notebooks, which were particularly interesting in a context of my study – Collaborative Robustness and 'Walkers and Talkers' analysis. I would like to use them for research and would be happy to contribute to the test and development of the experimental tools.

I got an ethics approval for my master's dissertation from UCL Ethics Committee, the main issues to be considered were the safety of personal data collected from the SDO's portal, privacy and safety of the interviewees, potential biases of the research team. Due to the ethics considerations all the interviews were anonymized, and all companies were mentioned without any reference to the individuals. I plan to do the same for this part of the research, however, one of the findings of oneM2M case study is the presence of epistemic community [3] around the standard and existence of the individual influence within the SDO [4] and in the industry.

The findings of oneM2M case study showed that there is a high level of alignment among the stakeholders, which slightly fluctuates through the years. At the same time, there are companies, who are more engaged in various parts of the standard, and who are collaborating more with each other and forming, as mentioned by one of the interviewees, 'camps'. We found that while the main interest of the companies to engage in standard-making process is to gain some commercial advantages in a long-term perspective, this does not necessarily mean the advantages for a specific company but can be interpreted as an investment in an international or local market growth. Additionally, we found 'silent' stakeholders such as regulators, and 'external' stakeholders, such as national governments, and tried to map their relationship and influence on standard development process. Altogether these insights help to understand what are main

interests and motivations of those, who engage in standard development, and to map the power relations between different actors [5], both these findings should help academia to better understand the nature of standards in IoT industry, and practitioners to create more transparent and inclusive standard development process.

Reference list:

1. Peters, B. Guy. 2018. 'The Challenge of Policy Coordination'. *Policy Design and Practice* 1 (1): 1–11. https://doi.org/10.1080/25741292.2018.1437946.
2. OneM2M. 2021. n.d. Accessed 31 August 2021. https://www.onem2m.org/
3. Haas, Peter M. 1992. 'Introduction: Epistemic Communities and International Policy Coordination'. *International Organization* 46 (1): 1–35. https://doi.org/10.1017/S0020818300001442.
4. Baron, Justus, and Olia Kanevskaia Whitaker. 2021. 'Global Competition for Leadership Positions in Standards Development Organizations'. SSRN Scholarly Paper ID 3818143. Rochester, NY: Social Science Research Network. https://doi.org/10.2139/ssrn.3818143.
5. Carr, Madeline. 2015. 'Power Plays in Global Internet Governance'. SSRN Scholarly Paper ID 2809887. Rochester, NY: Social Science Research Network. https://doi.org/10.2139/ssrn.2809887.