Partnerships for Saving Lives – Disaster Connectivity Map

Concept Note - *draft*

Overview

Access to information and communication technology (ICT) networks and services are critical, in particular in times of disasters. With the increasing digital transformation of humanitarian operations understanding the status of connectivity is essential to support humanitarian programming. Increasingly we see the use of electronic dissemination of assistance to affected populations, and a need to restore connectivity so that people can access information and make informed decisions about their situation.

Real-time information on the type, level and quality of connectivity are important to identify connectivity gaps, and to make decisions on where and when to deploy often limited human, financial and physical resources to restore connectivity services. A number of ICT industry players – mobile network operators, Internet service providers, Internet and social media companies – have data that can identify and monitor the status of connectivity, in real time.

The objective of the Disaster Connectivity Map initiative is to build a partnership for the development of a live map that during times of disasters can provide information on the type, level and quality of connectivity that is available on the ground. This concept note serves as short explainer of the initiative and identifies some key partners. While it identifies the overall objective and key partners, it does not provide detail on how to achieve the objective. A more in-depth feasibility study and detailed concept note is required to define the way forward once consensus is reached on the initiative.

The issue

ICT systems are vital throughout the disaster management cycle from the mitigation and preparedness phases, to the immediate aftermath response and recovery phases. In times of disaster, telecommunication networks often get impacted resulting in partial or complete loss of connectivity. At the same time, this is the time when communication is of critical importance to enable humanitarian relief efforts. Understanding the status of connectivity in a timely manner can support the decision-making of IT responders to prioritise their efforts in areas of highest need.

 The objective

The objective of this initiative is to build a Disaster Connectivity Map which will help to understand, monitor and illustrate the type, the level and the quality of connectivity. This will provide stakeholders responding to emergencies with important information on:

- the level of destruction caused by the disaster
- network availability to receive and send critical information
- where to re-establish connectivity and how to prioritise deployment of limited human, physical and financial resources
- needs to engage in connectivity cooperation to share available resources and avoid duplication of efforts

The users

The primary users of the Disaster Connectivity Map would be those involved in relief efforts following a disaster: governments, humanitarian agencies, the private sector, and community groups, in particular those involved in re-establishing key networks. The map would help relief workers understand opportunities and challenges of coordination and communication. By overlaying information on connectivity and critical infrastructure, such as shelters, it could help prioritize specific areas that require connectivity. It would help network providers and those involved in establishing temporary networks to address the most critical needs in terms of allocating human, physical and financial resources. This would help re-establish connectivity so that the map would also address the need for people to communicate.

The partners

The project would bring together those partners who could help build the map, as well as those benefitting from it. The Disaster Connectivity Map would rely on data from private service provider, in particular mobile network operators, Internet service providers, Internet companies, satellite operators and others. Data sources on network activity could be collected and combined to identify the type, level and quality of connectivity, in real time. This information should be available 'live', as much as possible. It would also be possible to include an academic institution to develop an algorithm to display the information on the connectivity map in a user-friendly, simple way.

Counterargument/controversies

To develop the Disaster Connectivity Map it will be necessary to combine data from different sources into one interface. This would require sharing of potentially sensitive data, on usage patterns that indicate network connectivity status. The Disaster Connectivity Map will not present any personally identifiable information, and it will be a requirement that any data used to build the map is anonymized by the source party before sharing. It is acknowledged that some entities that provide connectivity services could be reluctant to share information on the state of connectivity with competitors and the public since this could be seen as providing information on their network sustainability, as well as potentially confidential network information.

Further efforts to define the data sharing agreement between collaborating parties will be required should the initiative proceed. Design considerations from an infrastructure and hosting perspective will also need to be addressed.

Governance

This initiative can only succeed if it brings together a number of key partners that produce and share data to build the Disaster Connectivity Map. Input from intended users will be vital to develop the map and its functions, to provide feedback on its usefulness, and to share use cases. Involving governments is required to help build the right regulatory framework.

Several governance structures could be envisaged:

- A data collaboration in which multiple parties - in particular private sector entities - exchange their data to create public value
- An UN-led partnership under the umbrella of the Emergency Telecommunications Cluster (ETC) that involves private sector partners, humanitarian agencies, universities and other relevant bodies.

Way forward:

- Prepare a more detailed concept note, taking into consideration:
    - Similar initiatives that exist
    - Use cases highlighting the difference that connectivity information can make in times of disasters
    - Base layers that could be presented on the map (eg. key ICT information) in addition to connectivity information
    - How and where the map will be hosted ensuring neutrality is considered
    - Consultations with potential partners, both source data providers and users of the map
    - Involvement of academic institutions to assess their interest and potential contribution to the initiative which may include verifying the processes followed to generate the map
    - Possible pilot countries to trial the map based on discussions with countries
    - Financial requirements and identification of donors/sponsors.
- Present this initiative at GET-19, at a session that convenes key partners, to present on similar initiatives on connectivity maps, but also to highlight the need, opportunities and challenges of building such a map.