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ICT for Disaster Management including Movable and Deployable ICT Resource Unit (MDRU)

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Hideo IMANAKA
Vice-Rapporteur of SG2 Q5
Advisor of MIC, Japan

Introduction

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- **Many disasters in the world**
- **eg. Great East Japan Earthquake in March of 2011**
  - In disaster areas, no network resources were available soon after the disaster other than the cellular network.
  - Many victims couldn't use even mobile phones due to congestion in cellular network.

Lessons learned that disasters render it impossible to provide basic ICT services.

- **Importance of ICT for disaster management**
- **Movable and Deployable ICT Resource Unit (MDRU)**
  - Instant provision of local ICT services in disaster areas
  - Flexible configurations for adapting to demand changes

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ICT for disaster management

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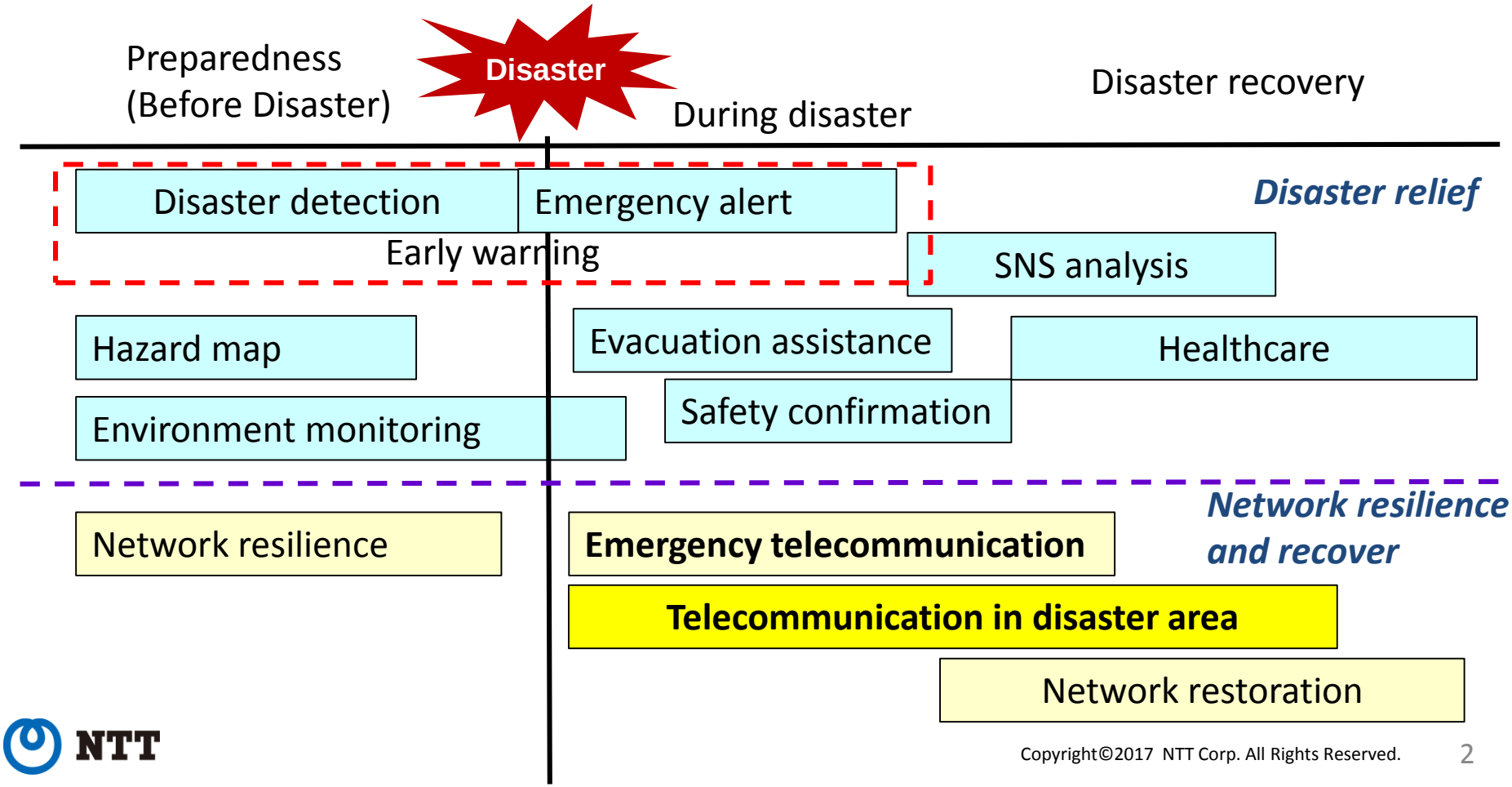
- ICT plays an important role in any phases of disaster management
- ICT for disaster management consists of disaster relief and network resilience and recover.



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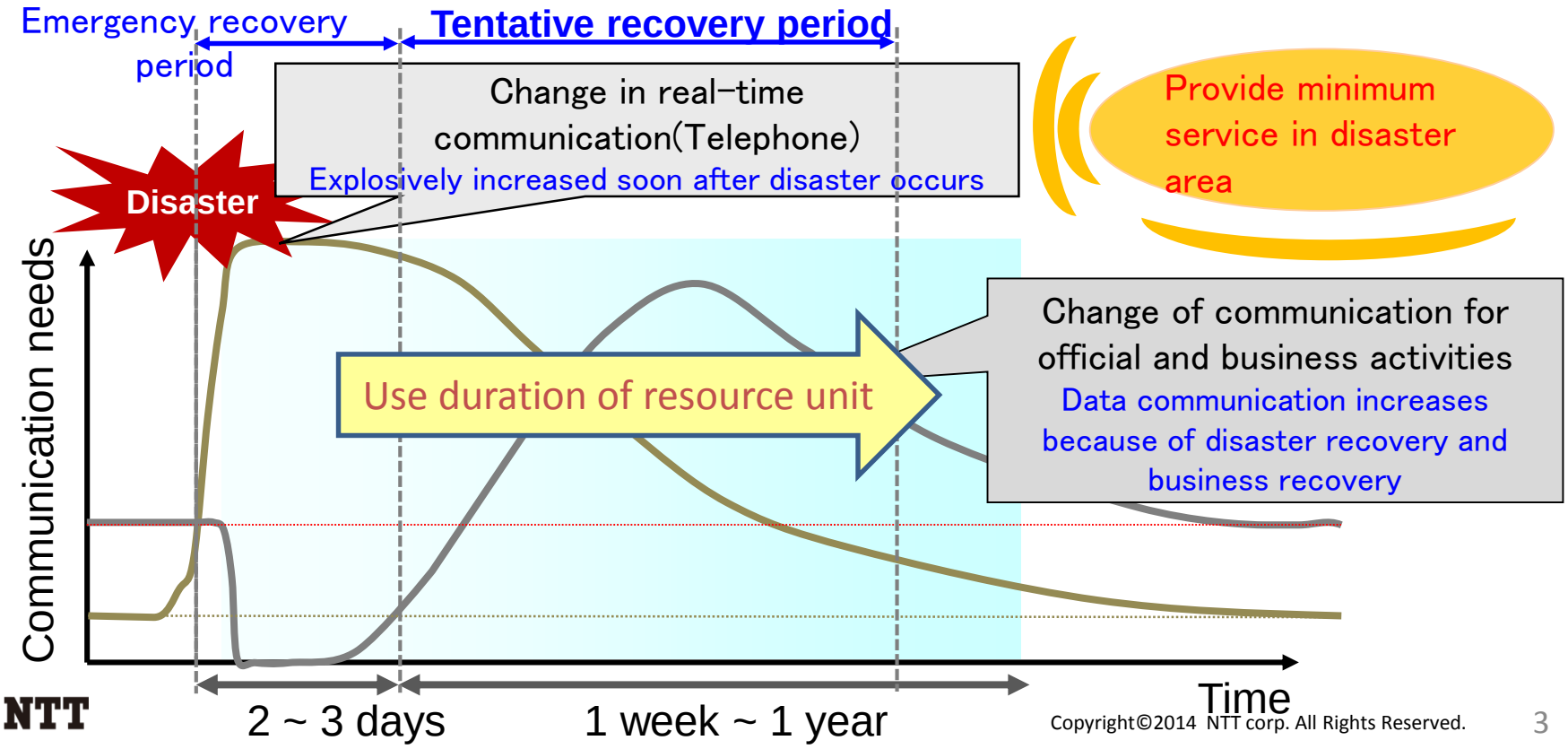
Telecom need in disaster

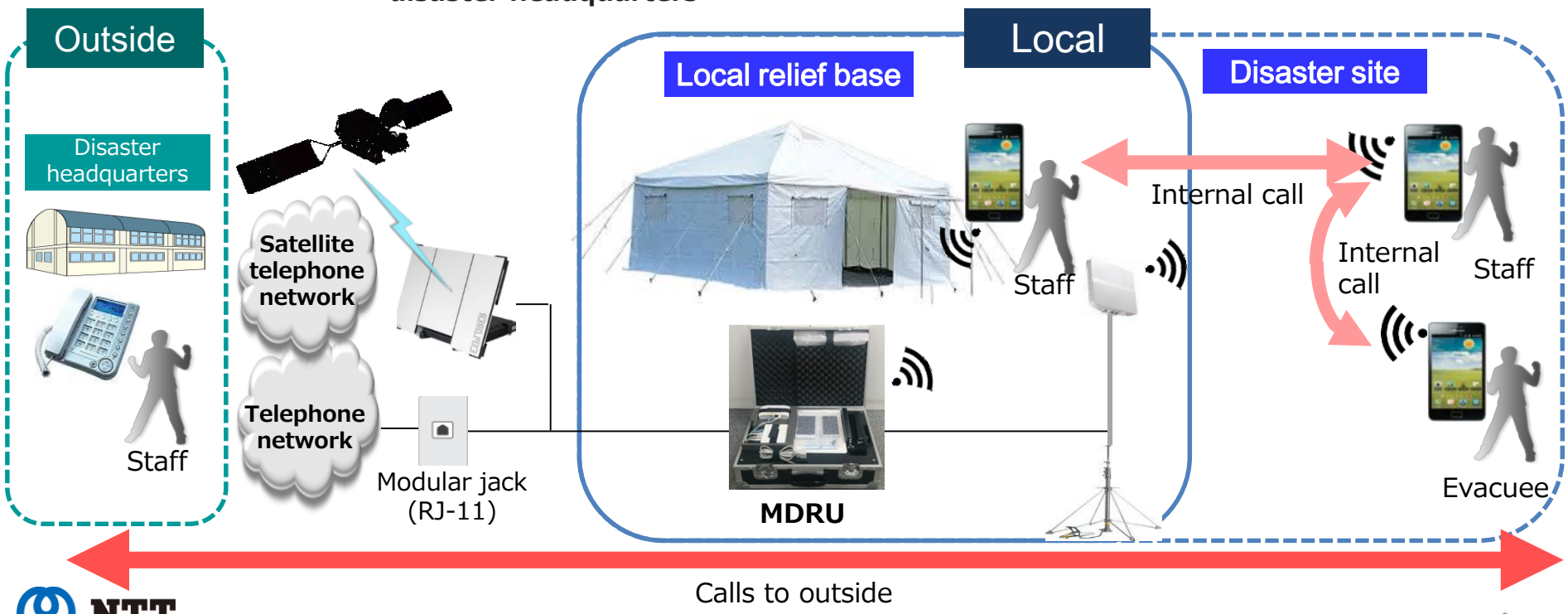
- Emergency recovery period: Real time communication demand increases explosively because of need to confirm status.
- Tentative recovery period: Data communication demand increases because of information gathering by local governments and enterprises.



MDRU in disaster area

- When any telecommunication ways are not available, MDRU provides users local (internal) phone call by WiFi connection with ordinal telephone numbers.
- If MDRU connects outside telecommunication lines, users can call outside and internet access.

Application example : Communication between staff and evacuees at the local relief base, disaster site, disaster headquarters



Types of MDRU

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【Container type】

【Automobile type】

【Rack mount type】

【Portable type】

IP-PBX

WiFi Access point

VoIP adapter

Battery

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Activities in ITU related to MDRU

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- **ITU project** of MDRU feasibility study in Philippines from 2014 to 2015

San Remigio Municipal damaged area

ITU MIC Ministry of Internal Affairs and Communications

- In 2016. **ITU-T Recommendation** L.392: **Disaster management for improving network resilience and recovery with movable and deployable information and communication technology (ICT) resource units**

- During WSIS-17, MIC announced Japan provides **three sets of MDRU** to ITU. ITU will bring up them to disaster affected countries with Satellite mobile phones when disaster occurs in the world.

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Summary

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- **Lessons learned from the Grate east Japan earthquake**
  - Wide variety of ICT solutions in disaster management such as emergency alerting, evacuation guidance, safety confirmation and disaster prevention.
- **MDRU (Movable and Deployable ICT Resource Unit)**
  - Instant provision of local ICT services, such as telephone calls
  - Suits not only disaster situations but also normal situations, such as rural areas and event sites.
- **Future work**
  - Capacity building and emergency drills using MDRU
  - Cooperation with other ICTs such as WiFi adhoc network and safety conformation

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Thank you for your kind attention.

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