Transitioning to packet-switched emergency communications
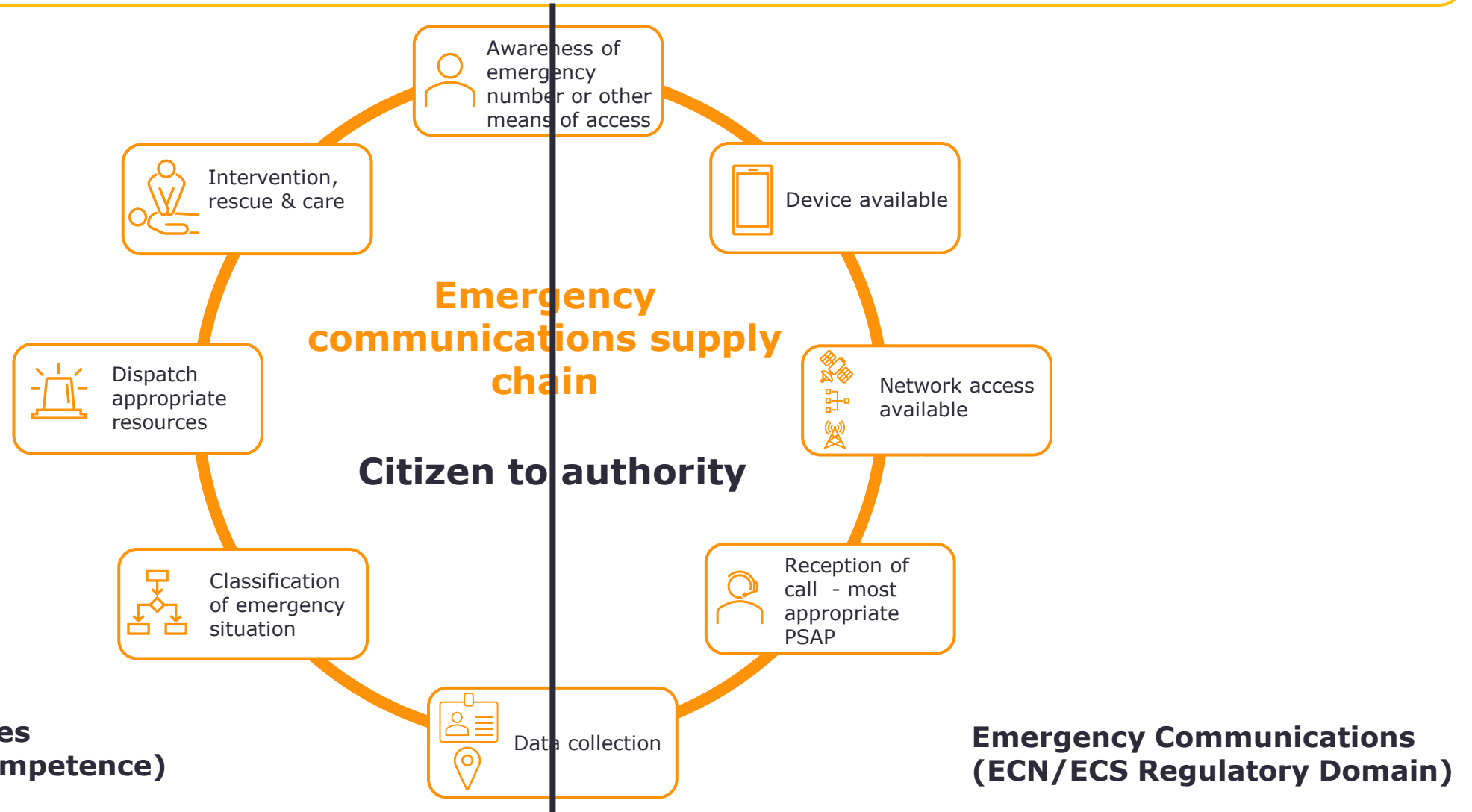
– technological developments & interoperability challenges

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The Emergency Communications Supply Chain

Emergency communications supply chain

Citizen to authority

- Awareness of emergency number or other means of access
- Device available
- Network access available
- Reception of call - most appropriate PSAP
- Data collection
- Classification of emergency situation
- Dispatch appropriate resources
- Intervention, rescue & care

Emergency Services (Member State Competence)

Emergency Communications (ECN/ECS Regulatory Domain)

Implementing packet-switched emergency communications

- [Delegated Regulation (EU) 2023/444](#) requires Member States to report to the EC by 5 December 2023 with a roadmap for upgrading PSAP systems to packet-switched infrastructure

- Transition to packet-switched infrastructure not in itself mandated

- However, implementation deadlines have been set for certain services that require packet-switched infrastructure

  - **Real time text** and where video is provided **Total Conversation** (by June 2025 in networks and June 2027 in PSAPs - EAA)

  - **eCall over IMS**. IVS systems in cars in dates ranging from 01 January 2025 – O1 January 2027. PSAPs must be ready by 01 January 2026

EECC – Article 123 – Review Procedure on End-User Rights

- **Article 123 (1)(c)** - to what extent effective access to emergency services is appreciably threatened, in particular due to an increased use of number-independent interpersonal communications services (NI-ICS), by a lack of interoperability or technological developments.

- **Regarding increased use of NI-ICS** – No evidence to suggest an appreciable threat. 78% of emergency communications in 2021 were placed from mobile phones with vast majority of remainder placed from fixed lines. Access via SMS, mobile apps and relay services typically below 1% of all emergency communications. In the future, primary research on attitudes of certain cohorts might be necessary to fully inform a decision on this.

Revisiting legislation on this issue now would distract from the urgent need to implement native solutions - VoLTE, eCall over IMS, RTT etc.
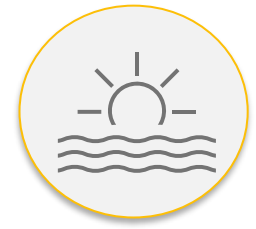
Regarding interoperability and technological developments - 2G/3G sunset

- European MNOs **sunset dates** range from 2025-2031 (some 2G and or 3G already switched off)

- Emergency communications in Europe still relies heavily on **circuit-switched fallback** even where VoLTE services are available. The transition to VoLTE/VoNR/VoWiFi now underway

- **White Paper** "How to master Europe's digital infrastructure needs? (Consultation open until 30 June 2024) addressing **continuous support** of important legacy services such as emergency and critical communications (e.g. eCall).

PSAPs upgrading in accordance with ETSI TS 103 479 which provides architecture for simultaneous support for circuit-switched and packet-switched emergency communications as long as there are legacy elements in devices, networks and PSAPs

Regarding interoperability and technological developments -– VoLTE issues

- **Issues:**

  - Different **VoLTE roaming profiles** - Rationalisation from 6 profiles to two profiles by GSMA is welcomed but not all MNOs adopting them

  - **Network-handset compatibility** - IPv4 and IPv6 support. Main handset providers support but not all networks do.

  - Lack of **VoLTE roaming agreements**

  - National roaming for emergency calling (**limited service state**) – some issues discovered in testing.

  - **Provision of location** in SIP signalling (PIDF-LO) – not just for caller location but for routing purposes

Need for increased collaboration between handset providers, networks, network equipment vendors, PSAPs and PSAP solutions providers

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Regarding interoperability and technological developments - Native Real Time Text

- **Standardisation** – Process for developing harmonised standard not synched with implementation deadlines. Work is underway in ETSI and technical specification publication and availability of stable draft of HS should be ready end of August (STF 642).
- **Devices** – At least one handset OEM is ready and has test bundles available for operators.
- **Networks** – No implementations in Europe yet. Deadline is June 2025 and is not limited to just emergency communications (broader requirements of EAA).
- **PSAPs** – Not ready. Solutions providers still building in capability to receive RTT in call handling systems. Design challenges in ensuring all data retention obligations are met.
- RTT **interoperability** across networks needed for end-to-end national and roaming support.

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