

The logo consists of a large, 3D-style red letter 'A' followed by a white number '1'. The background is a dark blue world map with glowing circuit patterns and blue dots.

Slovenia floods August 2023

19.11.2024

Resilience in legal theory and after an actual catastrophic event

RESILIENCE 3 different laws: **Electronic communication Act**, Information Security Act and Critical infrastructure Act (at least: 3 different legal/operational regimes, 3 different state administrations-AKOS, Cybersecurity office, Ministry of defence)

- And specific ISO standards (Nr. 22301, Nr, 270189)
- Is one regime possible – complete crisis handbook?
- Can only realistic solutions be included?
- **Critical infrastructure needs priority treatment.**

Telecommunications (ICT sector): **among most important pillars of critical infrastructure** (by itself and for other critical infrastructures) – what in case of crisis operators need is operational crisis handbook, a team, functioning power supply, security/protection, access to locations and supply chain (i.e. access to gasoline)

When crisis, **the time to react is crucial** – internally to detect problem and respond accordingly in order to restore normality, externally a cooperation between telco operators (voluntary), all infrastructure operators and emergency state administrations (one administration to take the lead and establish communication channel – should be predefined and should be mandatory))

Expectations defined in law differ from reality (i.e. national mobile roaming) – **obligations must be realistic!**

A1 Telekom Austria Group

Who We Are

One of the leading convergent communication providers in **Central and Eastern Europe**.

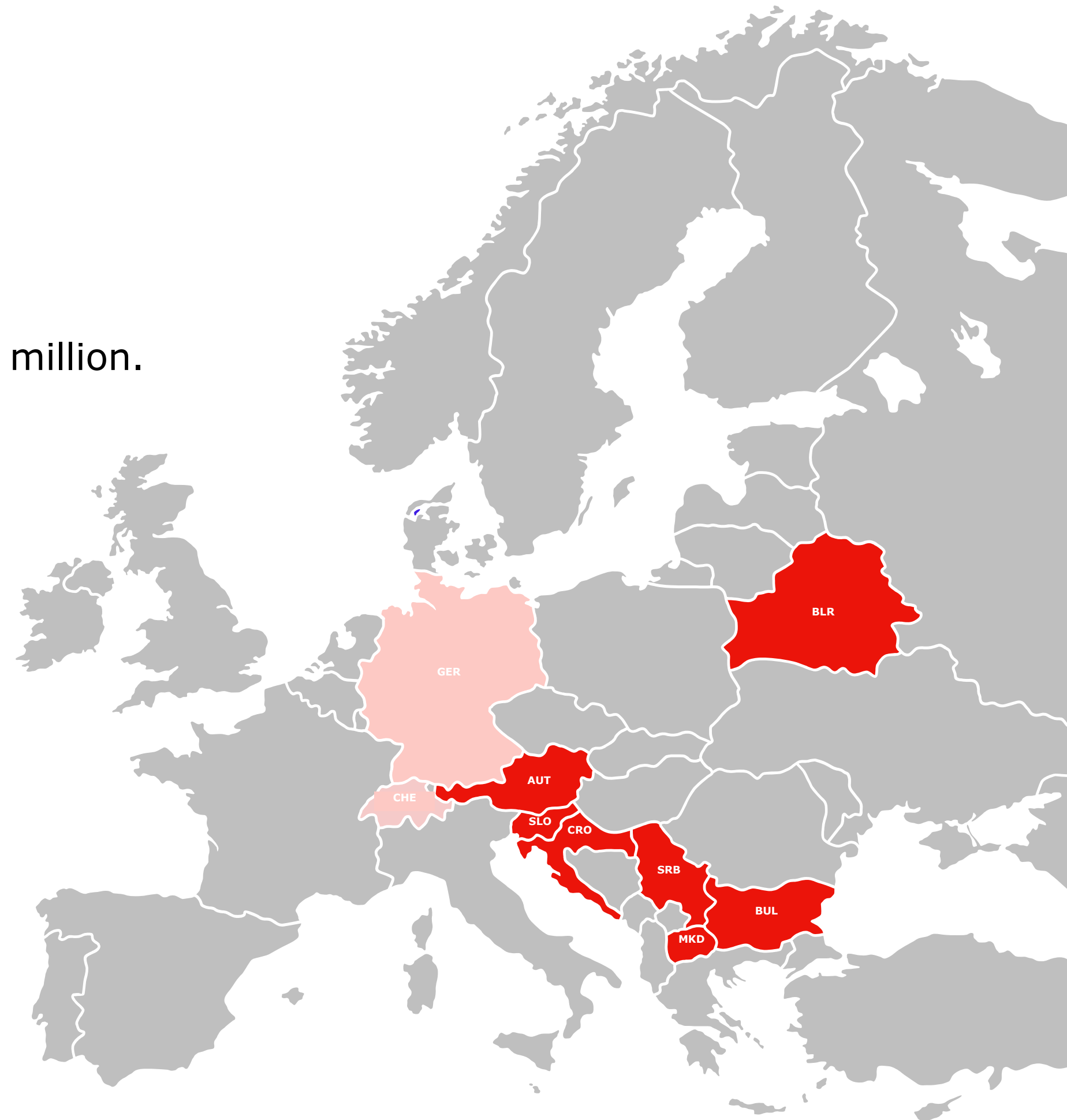
We operate in **seven countries** with a population of 42 million.
6 out of 7 markets are convergent.

Our about **18,000 employees** deliver

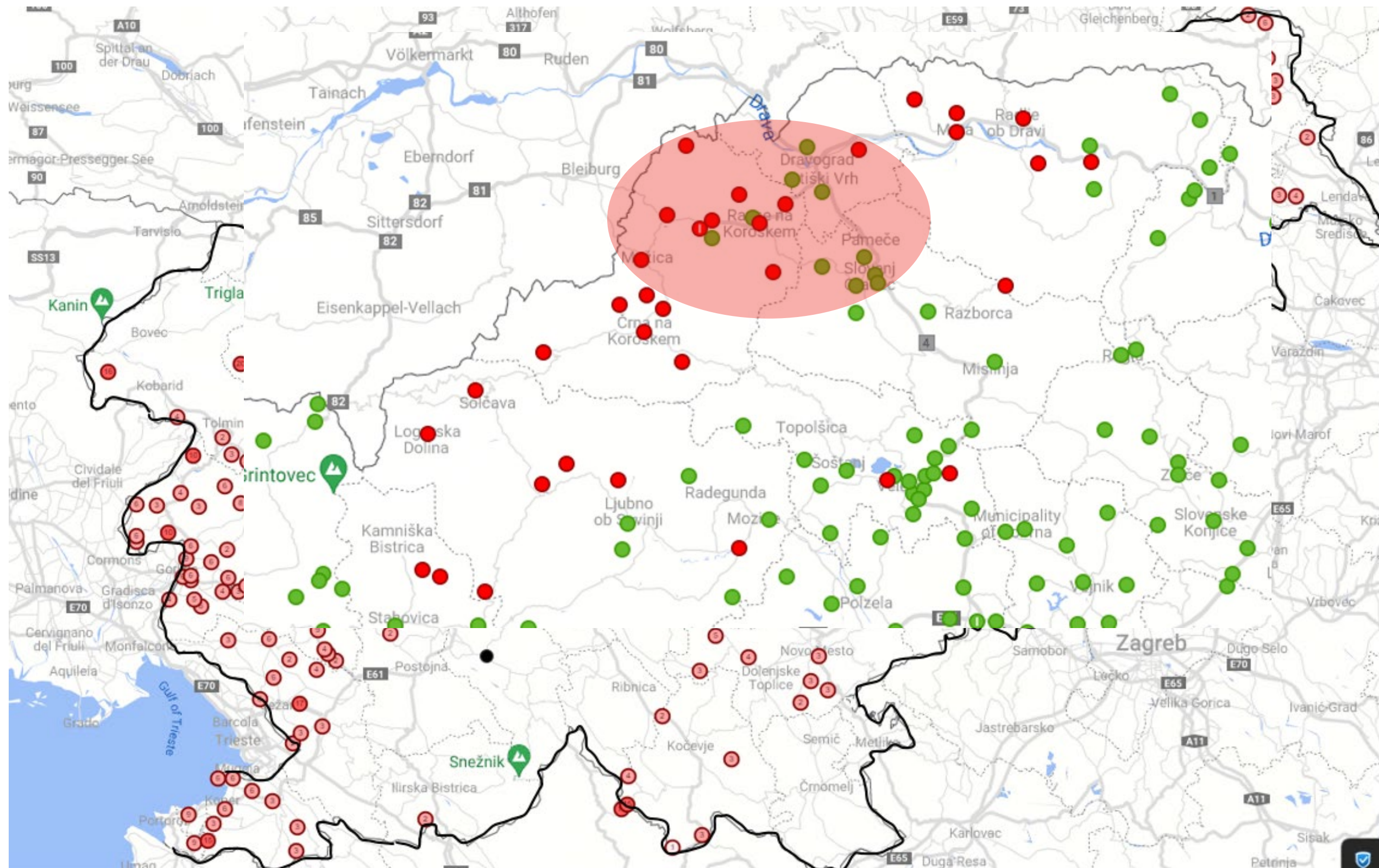
- Products and services of voice telephony, broadband Internet, TV, multimedia services, data and IT solutions, wholesale as well as fintech services
- For approximately **26 million customers** across our markets of operations
- We offer cloud, security and ICT-services in Germany and Switzerland

¹ Short: A1 Group

* In compliance with United Nations' Security Council Resolution 1244.



Floods in Slovenia August 2023



Floods in Slovenia Avgust 2023

How we reacted:

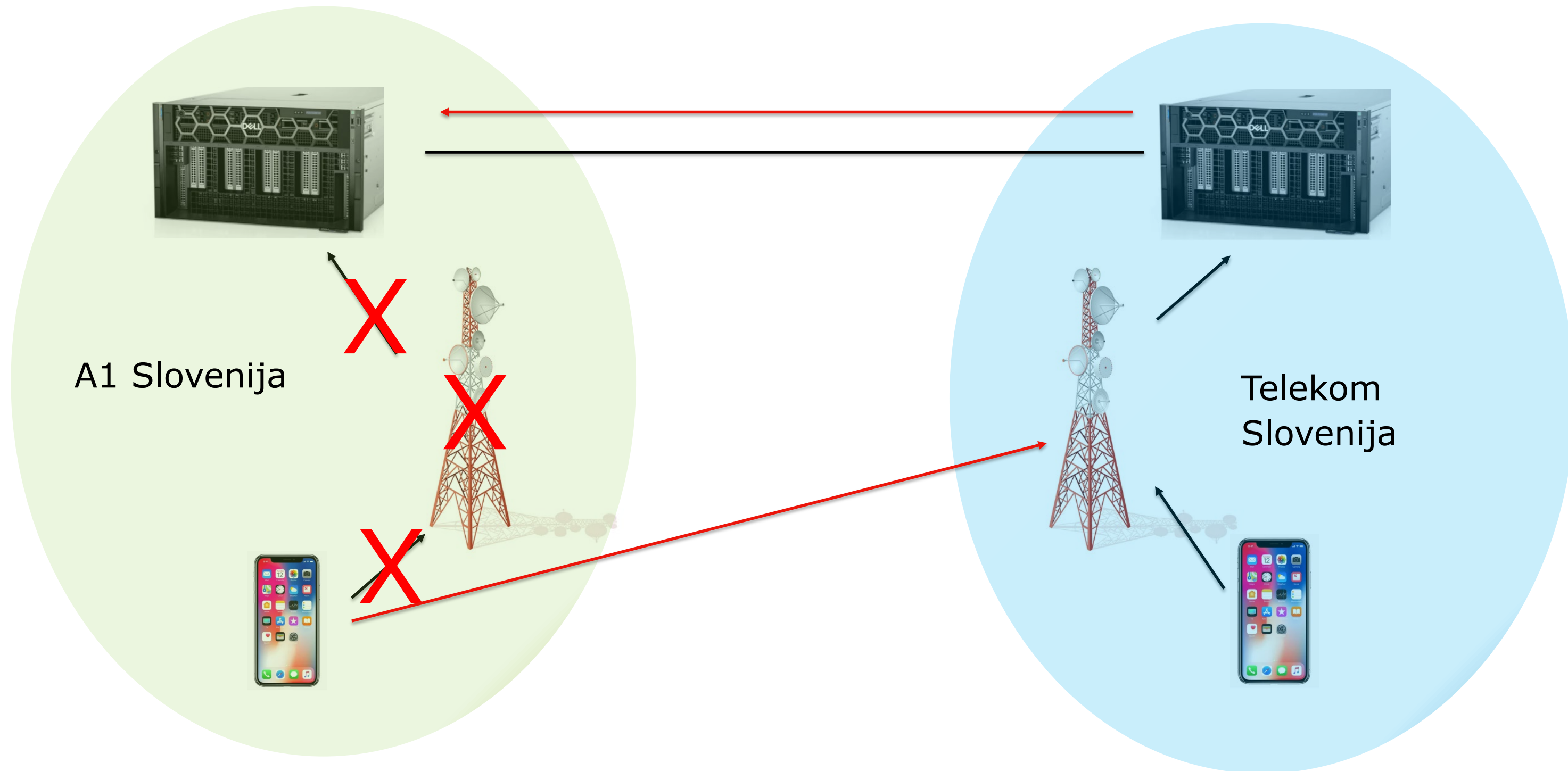
- activation of A1.SLO crisis team (board member + LT-1+ experts)
- Focus on communication – internal, external and to our clients
- Close cooperation with civil protection, police and army
- Power supply recovery
- Inaccessible areas - organizing transport with special vehicles and helicopters (destroyed road infrastructure)
- Close cooperation between operators (on location where all OpCos are present, we shared power supply source from aggregates, we also shared still working transport infrastructure)

Main focus:

- Reactivate service in shortest possible time

Floods in Slovenia Avgust 2023_National Roaming

Limited **regional national roamaing** scenario



Crisis management_lessons learnt

What	How	Experience during last floods	Action plan
Crisis announcement	Setup clear KPI's for activation of crisis team.	Internal Crisis team not activated.	CISO sent proposal of new KPI as part of Business Countinity plan.
Communication between other operators and URSIV/URSZR	URSIV and USRZR established communication between the operators, them and RTV through the teams group, A1 could not participate due to internal rules	We weren` t be able to establish MS Teams communication with others operators and public services (URSIV, URSZR)	CISO prepare options for establishing communication on that kind way, communication must be tested beforehand
Generators	Provide generators with smaller capacities, which are more suitable for interventions in places that are difficult to access	We found that in areas with difficult accessibility, the existing aggregates are not suitable (too big, too heavy, mandatory access by vehicle, too heavy for a helicopter)	Intervention procurement of 5 smaller aggregates, provision of processes for emergency use
Fiber cuts	Simultaneous fiber cuts of several geographically separated spans via different fiber providers to dispersed A1 Transmission POP locations	Transmission outage of entire Koroška region and as a consequence disrupted RAN and FIX services	Review of leased optical infrastructure, spans and KMZ data for additional geo redundancy, where possible by fibre providers
Microwave transmission	Physical Re-linking of own Microwave network to available Transmission locations. L2VPN service from Telemach during first 4 days in Koroška region for certain RAN sites without own Transmission	Where ED was available, Microwave was the only available and reliable technology of Transmission to RAN locations.	Re-model Microwave network and introduce additional „umbrella“ Transmission for regions as a Backup for Fiber cut outages
Limited regional roaming	Establish limited national roaming option with one of Slovenia Operators.	NR establish in one day including testing.	Prepare configuration files for inbound/outbound NR option including real time reporting
Unlimited data	New SOC activation on subs profile via IT provisionig process	Incompatibility with existing SOC's, 43k profile change in cca 24 hours	We will analyse technical possibility with new ADX PCRF for free data option, excluding outbound roaming

A1

Thank
you

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