

## STUDY 21 · BROADBAND COVERAGE MAPPING

# Broadband coverage mapping under Article 22 EEC and BEREC BoR (20)42 — data structure, Czech practice, EU benchmarks, FWA specifics, optimisation proposals



## AT A GLANCE

**STUDY 21** Methods for Mapping the Coverage of Fixed and Mobile Electronic Communications Networks — Grant Thornton for the Czech Ministry of Industry and Trade (MPO), November 2024, 60 pages, Czech with an English management summary.

**SCOPE** Broadband coverage mapping under Article 22 EEC and BEREC BoR (20)42 — data structure, Czech practice, EU benchmarks, FWA specifics, optimisation proposals

**FUNDING** Czech National Recovery Plan, financed by the European Union - NextGenerationEU.

## Why this study matters

Coverage maps decide where public money can go: they define intervention areas for state aid (OP TAK), feed DESI / Digital Decade scores and underpin the National VHCN Plan. Czech mapping fulfils EEC Article 22 and the BEREC guidelines — ČTÚ collects data annually at address level — yet the data cannot yet effectively target support where connectivity goals need it most. With Czech VHCN coverage well behind the EU average, sharper data is a policy lever, not paperwork.

## What the study covers

### The rulebook

Article 22 EEC requires a geographical survey at least every 3 years and allows VHCN forecasts. BEREC BoR (20)42 sets the indicators: QoS-1–3, VHCN categories 0–4, speed categories 2 to  $\geq 1,000$  Mbit/s, address-level data (FWA also  $\leq 100 \times 100$  m grid). GBER adds state-aid rules — mapping  $\leq 18$  months old, public consultation, wholesale access; the GIA eases coordinated construction.

### EU benchmarks

Lithuania maps infrastructure, investment, services and demand in one system, down to a  $60 \times 60$  m grid. Austria codes infrastructure types (RTRTYP) down to ducts in geodata, via three single information points. Germany pairs a EUR 12 bn gigabit programme with a monitoring centre for fibre overbuild (525 reports → 427 cases).

### Czech practice

ČTÚ collects data yearly via the ESD system, per RÚIAN address point (§115a, Act 127/2005), through forms ART242, ART241 and BH23. Results feed mapinternetu.cz and vportal.ctu.gov.cz; three verification procedures test backhaul capacity and disputed coverage. A 2024 proposal trims up to 40 % of geographic indicators and 56 % of the mid-year form.

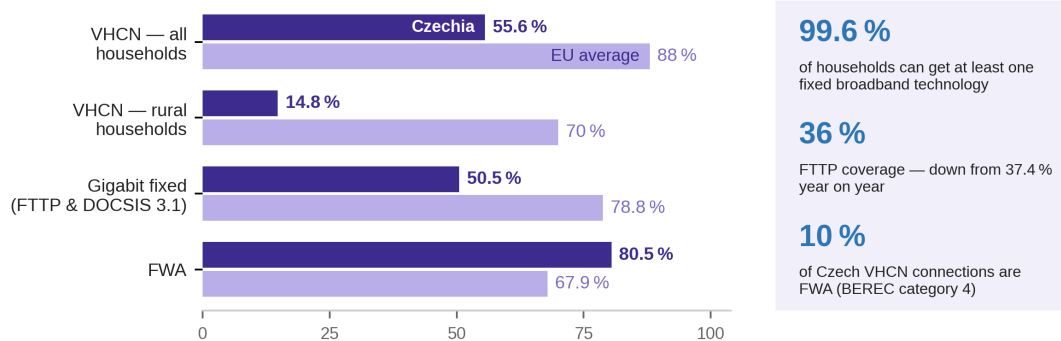
### What MPO needs

A homogeneous view of networks — topology and capacity down to backhaul and core (DP-CO); data to lift the DESI connectivity dimension, where Czechia scores weakly; and updated intervention areas, as FWA-covered areas reported “black” can be blocked from support they may need.

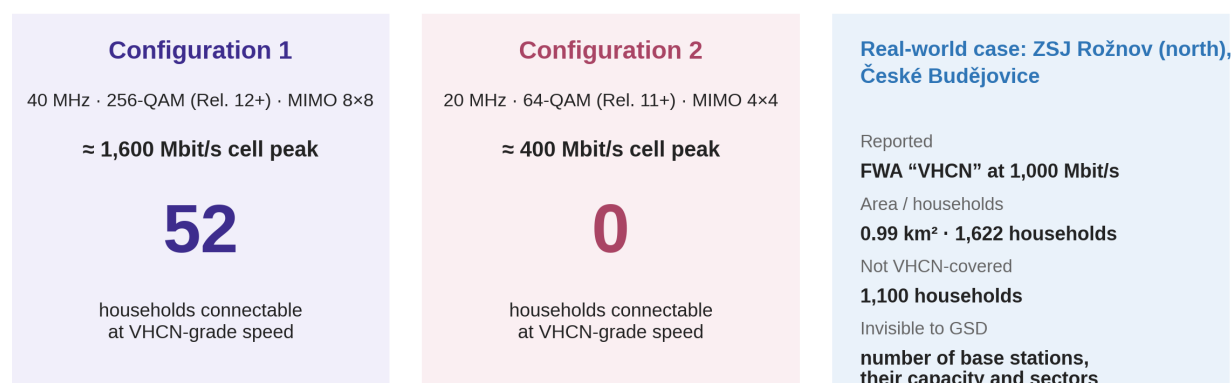
## The FWA question — when “covered” need not mean connectable

Czechia has an unusually strong FWA tradition — and that is where the mapping problem bites. Reported FWA parameters need not reflect real connectivity: quality varies with distance from the base station, backhaul, spectrum, modulation and load, and the survey does not capture the number, capacity or sectors of base stations. One operator reporting FWA as VHCN can turn an area “black” and block support for fixed high-capacity networks, even where gigabit-grade quality under the BEREC category-4 criteria (350/50 Mbit/s plus strict QoS thresholds) may not be achievable. BEREC’s 2024 implementation report confirms the problem EU-wide — and offers no solution yet.

## Where Czechia stands — share of households covered (June 2023)



## The FWA reporting gap — one "VHCN" claim, two very different base stations



Study example (ch. 8), CTU network-capacity calculator: 350 Mbit/s VHCN service, urban Poisson setting (95 %), aggregation 1:50, utilisation factor 0.15. Four-sector site; totals 4x13 with UF vs 4x0.

## How often EU states collect nationwide coverage data (study ch. 5)



## What the study proposes

- 1 Map the backhaul layer** — Two variants: a unified media/technology nomenclature across access, backhaul and core networks (inspired by Austria), or a new data field capturing only the capacity and media of backhaul distribution points. The study's conclusion sees the second, lighter variant as the more feasible route.
- 2 Redefine intervention areas** — Derive the OP TAK support categories (A–D, the ZSJ "colours") from summary information per area — such as the share of "black" address points — instead of shares of SCOBAM covered at given speeds; areas without fibre, or with VHCN reported by FWA only, could then qualify for support.
- 3 Collect data through an API** — A standardised questionnaire API with templates, validation, import/export and webhooks — recommended by BoR (20)42 — would cut errors and administrative burden — provided the extra load on ČTÚ is compensated.
- 4 Publish through one portal** — Integrate Mapa internetu, the price barometer and VPortal into a single central point that also serves stakeholder comments, verification and investment protection for operators.

## KEY TAKEAWAY

Czech coverage mapping meets its legal obligations — but the data cannot yet effectively steer investment into high-capacity networks. The biggest gaps are the reporting of FWA connections and the absence of network-topology information. The most workable mechanism combines enhanced collection on available connections with advanced analysis and verification ("Scenario 2"), operators transparently reporting real technical parameters including capacity down to the backhaul — while keeping the process as simple as possible. Updated BEREC mapping guidelines are expected in 2025; Czech changes should track them.