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Estonian facts



Area: 45.000 km²

Population: 1,3 mln

Population density: 29/km²

Capital: Tallinn

Broadband coverage:

100Mbit/s – 50% of population

3,5G coverage – 100%

4G coverage – 50%



Estonian Broadband Development Foundation



❖ **Estonian Broadband Development Foundation (ELA)** was founded by 8 major Estonian telecommunications companies: Elion, EMT, Elisa, Tele2, Levira, Ericsson, Eltel, and TelevõrguAS 3 years ago for EstWin project.

❖ All EstWin fiber optical networks belong to ELA;

❖ Network design, project management and application of funds necessary to construct the networks is executed by ELA;

❖ 3rd party contractors for deployment and operations & maintenance of the EstWin network will be selected via open tender process to ensure competition between alternatives.

❖ ELA is a non-profit organization;



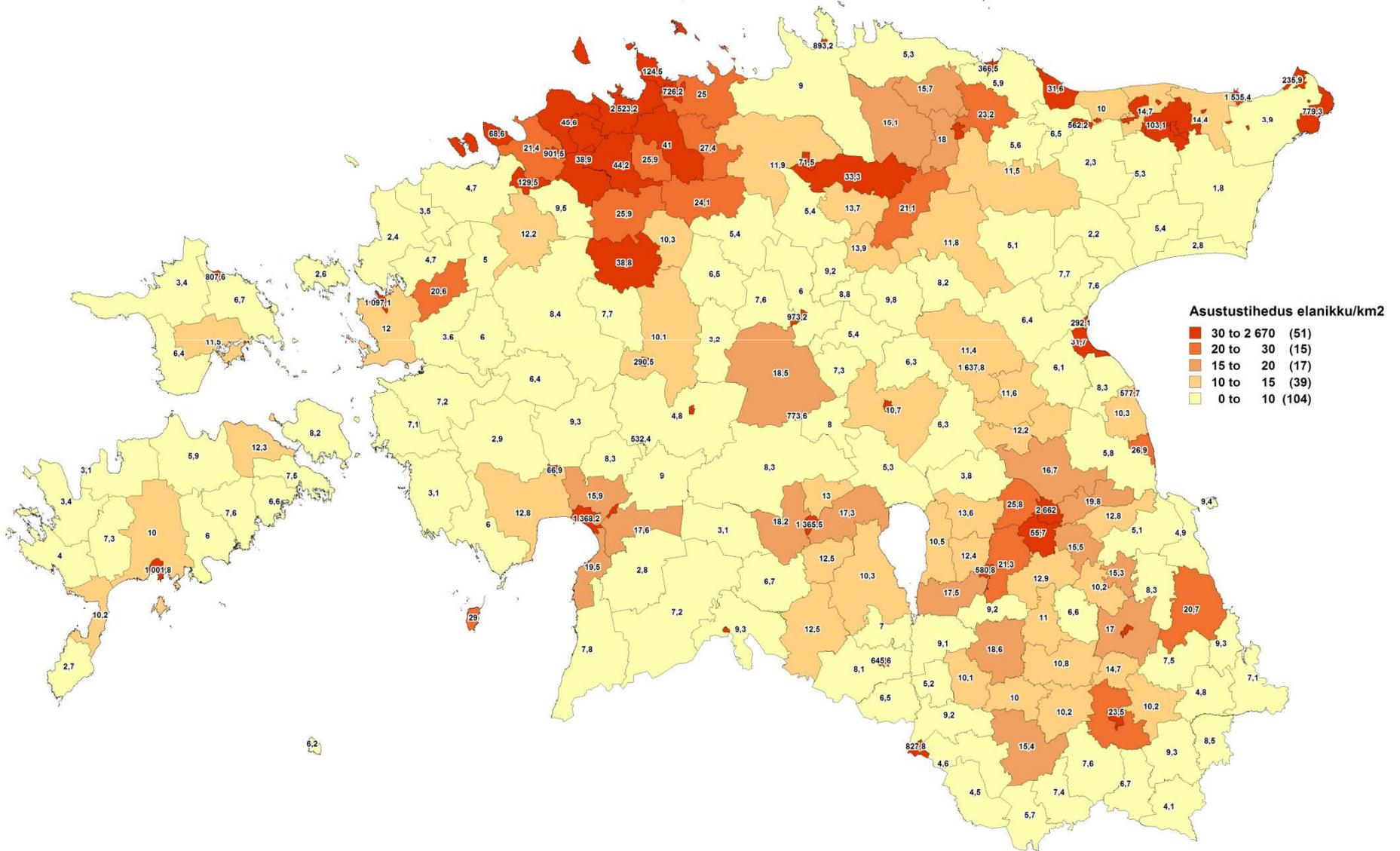
Broadband for everyone



- ❖ Telecommunication services in Estonia are provided by private businesses;
- ❖ Competition must ensure development of telecom industry;
- ❖ State generally does not directly intervene in private sector activity, especially in terms of directing public money towards any private business sector;
- ❖ State can only intervene where the market does not function properly;

- ❖ Telecommunications companies modernize their networks in places where there are enough consumers, i.e. in cities;
- ❖ Today, 50% of population has the possibility to join a 100 Mbit/s Internet (FTTH, Docsis 3);
- ❖ The state helps the areas of market failure to build a backbone network so that operators can offer their services to end users;
- ❖ In the second stage the government can also help to build access network (last mile) in the areas of market failure.

Estonia - one big market failures area



What is EstWin Network?

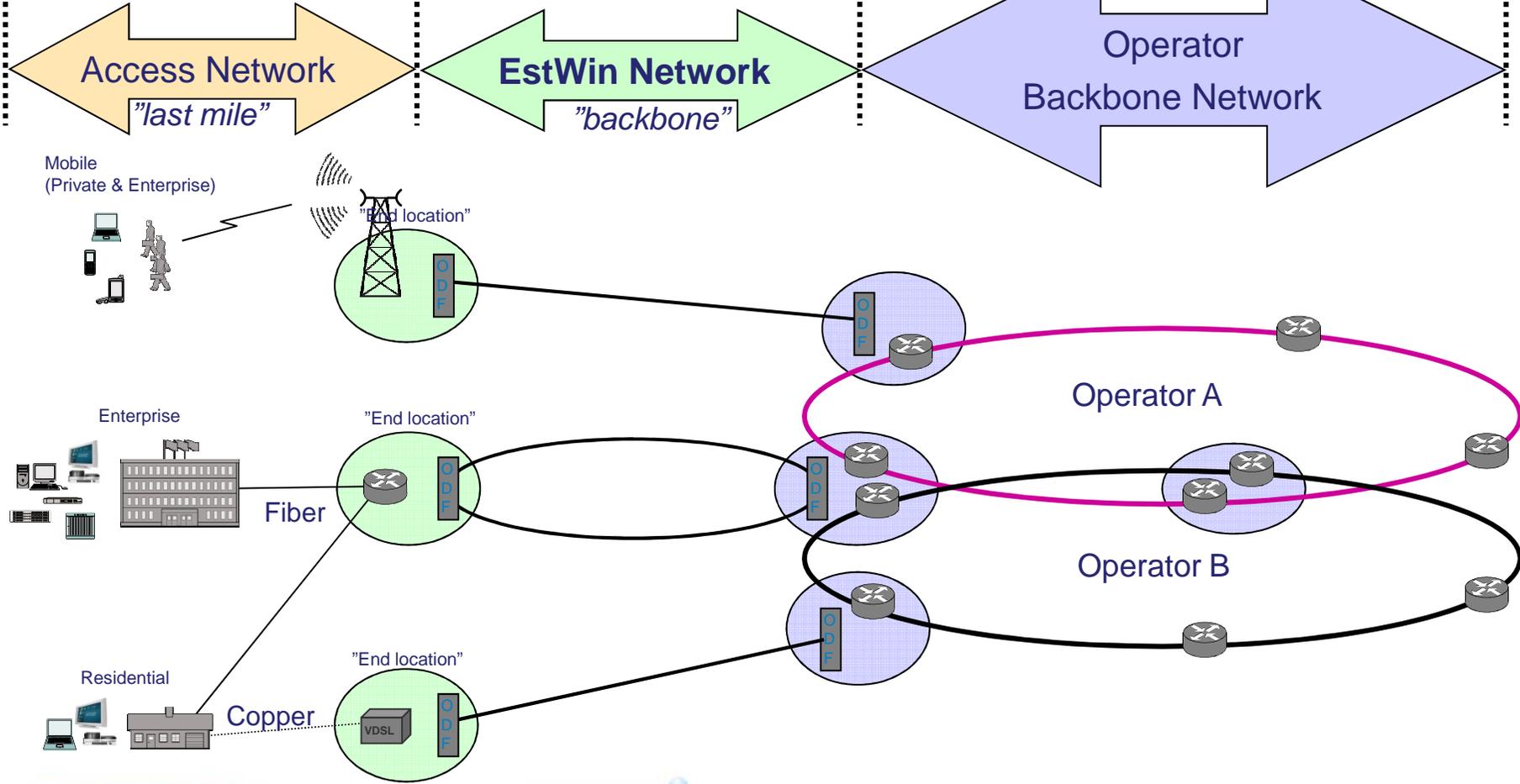


EstWin network is constructed only in rural areas where optical network does not exist (white areas).

- ❖ EstWin is a backbone network to connect operators' nodes;
- ❖ Fiber-based physical network (dark fiber);
- ❖ The network consists of fiber-optic cables, which are blown into underground microduct. Network connections are in outdoor or indoor cabinets and along the route of network underground manholes in approx. 1.5 km intervals;
- ❖ Directly to the EstWin network are connected existing fix operator sites, mobile masts and public institutions buildings;
- ❖ The network will be built primarily on state-owned road area in order to avoid debates and disputes with private land owners.



Network design overview



Network elements



Where and how will the network be built?



- ❖ Overall layout of the network was made in 2009 and was based on the geographic location of population and the existing optical networks;
- ❖ The backbone network will be built so that 98% of all households in Estonia will be located no further from the network than 1.5 km;
- ❖ In total 6,400 km of fiber-optic network will be established;
- ❖ Before each phase of construction a detailed plan is made that takes into account the location of houses, the wishes of local governments, telecommunications carriers, the location of the existing communication nodes, etc. These detailed plans are agreed with all parties;
- ❖ Currently 2000 km of network are completed and by the end of this year 2300 km are finished.



EstWin Network when completed



What is the purpose of the network and what it enables?



- ❖ EstWin network is a backbone network and its purpose is to bring high-speed internet to the centers of urban regions. The purpose of this project is **not** to connect individual houses;
- ❖ All operators' nodes and mobil masts will be connected to enable operators to establish last mile networks to end-users from there to offer consumers high-speed internet;
- ❖ For backbone network 48-fiber cable is blown into the microduct, 3 microducts are free of any further developments;
- ❖ Thanks to the use of microduct technology Estwin network can also be a part of last mile network;
- ❖ One extra cable for last mile network will be blown and practically all houses along the route can be connected to the network.



EstWin network users



- ❖ EstWin network can be used on equal terms by all operators and public authorities;
- ❖ Network planning co-ordination of all parties has ensured that the network is always built in the right place. The completed network is instantly taken to use;
- ❖ Currently the network is used by all major telecom operators;
- ❖ The network is secured with 24/7 surveillance, all faults will be repaired within 6 hours.



EstWin project financing



- ❖ EstWin backbone network total construction cost is ca 75 MEUR;
- ❖ Approximately 15% of network construction cost is self-financed by ELA;
- ❖ Approximately 85% of financing is covered by EU funds;

- ❖ At the moment the construction of EstWin network is financed from EU funds in the amount of 22 MEUR. The financing has come from the Regional Development Fund and Agricultural Fund;

- ❖ Further financing for the project is not yet known;
- ❖ We hope that the government will allocate some more EU funds for EstWin project during this EU budget period.



Last mile connections from EstWin network



- ❖ Last mile connections are established by the operators who offer Internet services to end-users;
- ❖ The main last mile technologies are today: DSL; DOCSIS3; FTTx; 3,5G and 4G;
- ❖ Last mile connections needs to be established by telecom operators in market conditions;
- ❖ Today about 50% of the population can access 100Mbit /s connection;
- ❖ Areas where there are not enough potential customers, and telecom companies are not interested in building last mile network, are called market failure regions;
- ❖ To overcome market failures we are preparing a plan for EstWin stage 2 to support the construction of last mile network. The plan will be completed by end of this year.



Conclusions



- ❖ Guarantee of success for the EstWin project has been the cooperation of all stakeholders and consideration of everyone's interests;
- ❖ State aid for the establishment of EstWin network is efficacious, it has no harmful impact on the market and operators' investments in rural areas have increased;
- ❖ Despite EstWin network there are however still many rural regions where it is not cost-effective for operators to establish last mile connections;
- ❖ CEF and SF may be solution for financing last mile networks in rural areas;
- ❖ In order not to spoil the market, we must find a balance between operators' investments and state aid.





Thank you!

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