



PUBLIC
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QoS Monitoring and Quality of 4G Services in Latvia

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Regional Expert Workshop for Europe on “New Issues in QoS Measuring and Monitoring”, 25-26 November 2015, Bologna, Italy



UNIVERSAL SERVICE DIRECTIVE Article 22.2 National regulatory authorities may specify, *inter alia*, the quality of service parameters to be measured and the content, form and manner of the information to be published, including possible quality certification mechanisms, in order to ensure that end-users, including disabled end-users, have access to comprehensive, comparable, reliable and user-friendly information...



- **Regulations** Regarding Quality Requirements of Electronic Communications Services, Submission and Publishing of Quality Reports;
- **Quality Measurement Methodology** of Electronic Communications Services;
- **Regulations** Regarding the General Authorisation.

THE “DIGITAL DIVIDEND” AUCTION



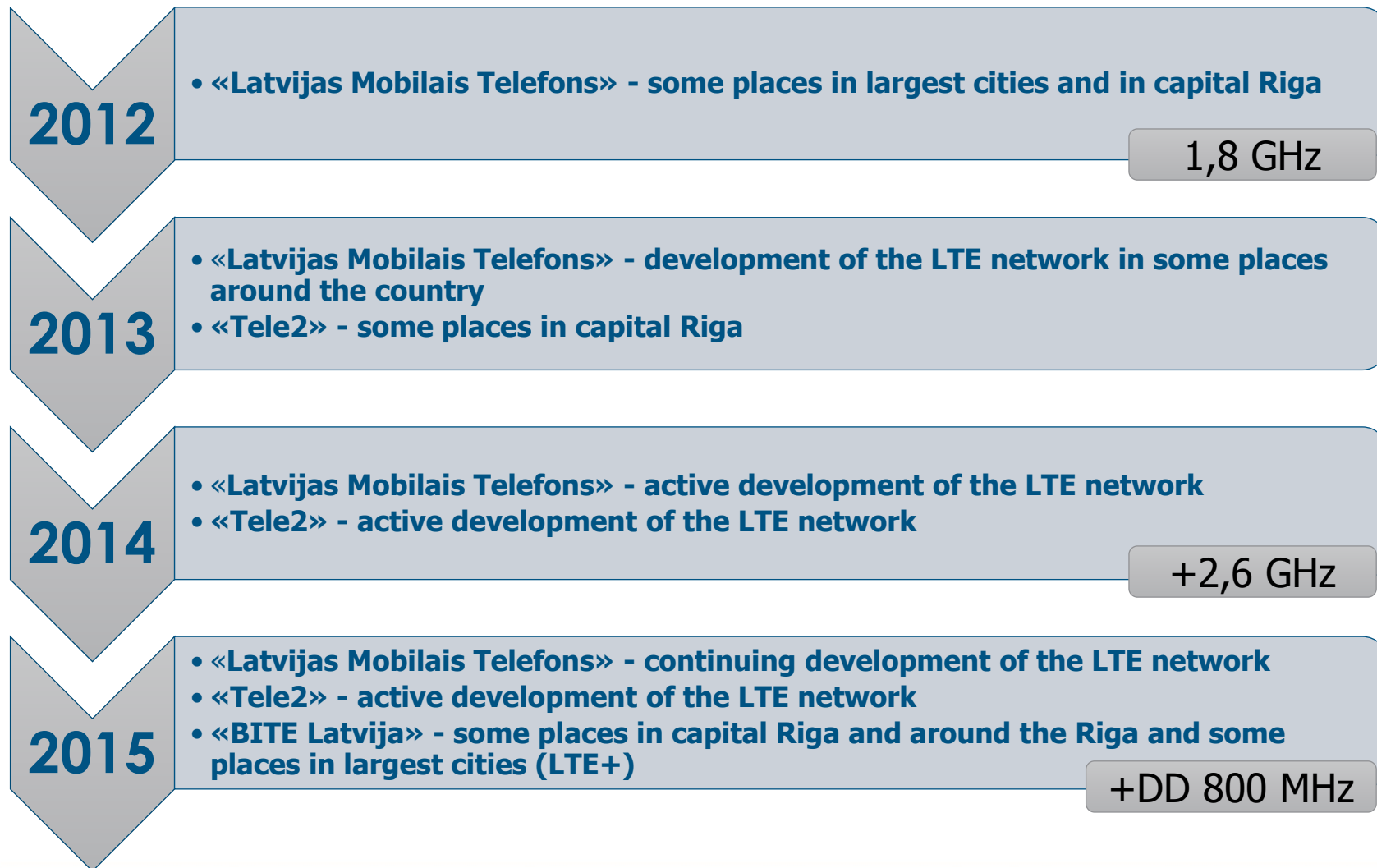
The European Union member states intend to make this band of auctioned frequencies available for broadband mobile communications to provide Internet access services, especially in rural areas, after switching to digital television

- The rights to commercially use **791.0 MHz – 821.0 MHz/832.0 MHz – 862.0 MHz** bands of radio spectrum in the Republic of Latvia were offered to **three auction winners**. Each auction winner was granted the rights to commercially use only one part of the auctioned radio spectrum in the Republic of Latvia for 18 years from **July 1, 2015**

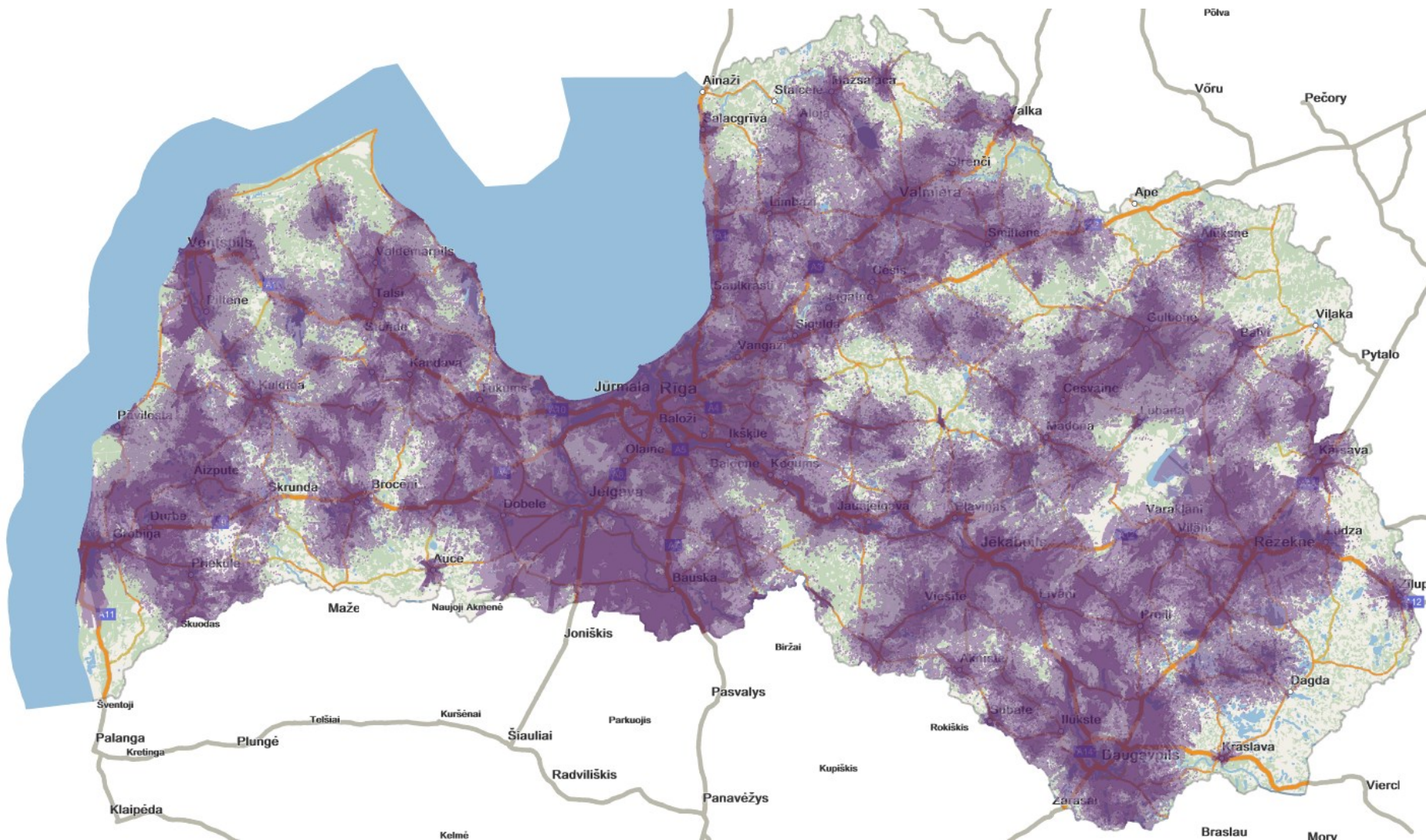
Progress in 4G networks development



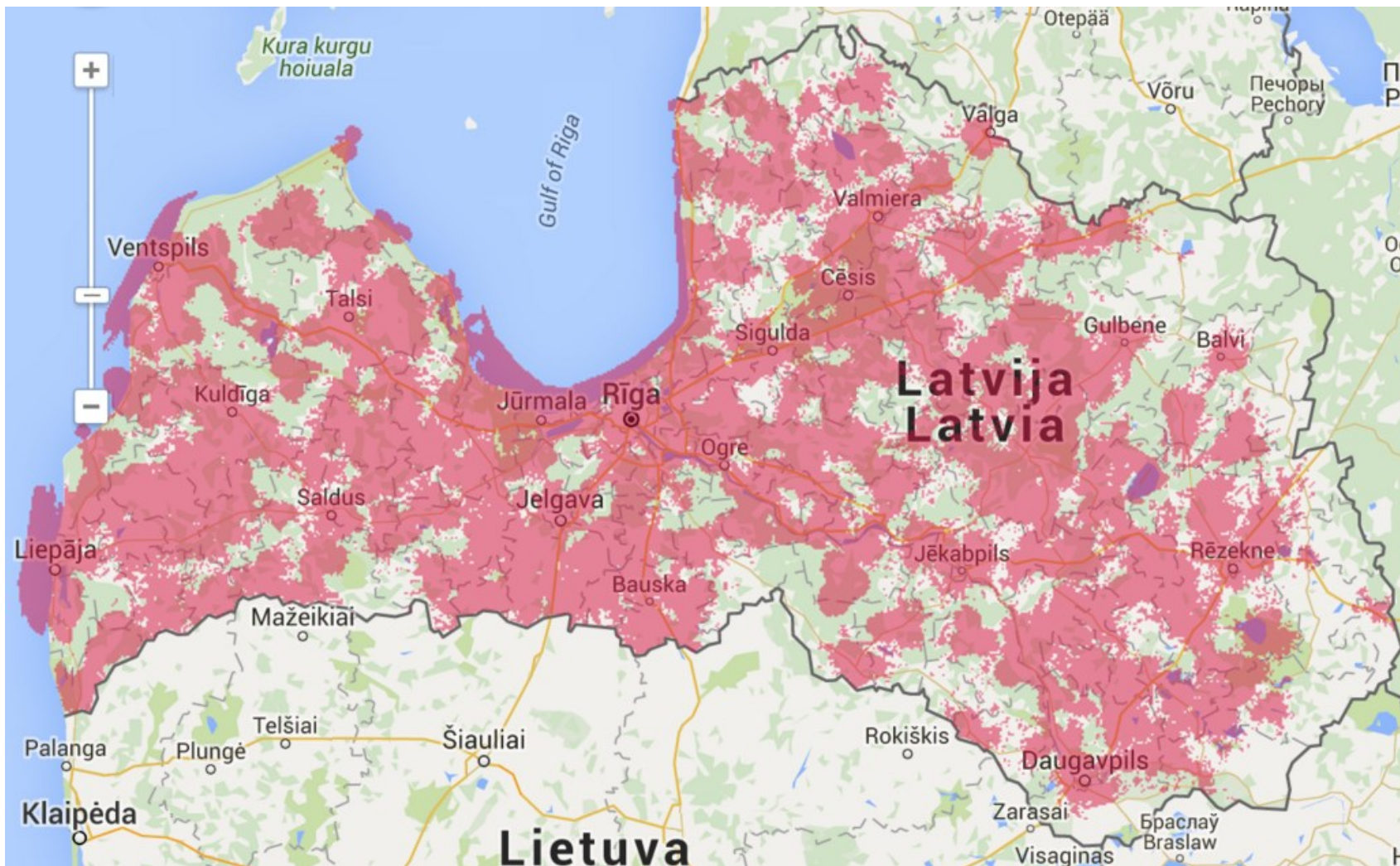
Activities of Latvian operators developing the 4G networks



4G coverage map 2015 – «Latvijas Mobilais Telefons»



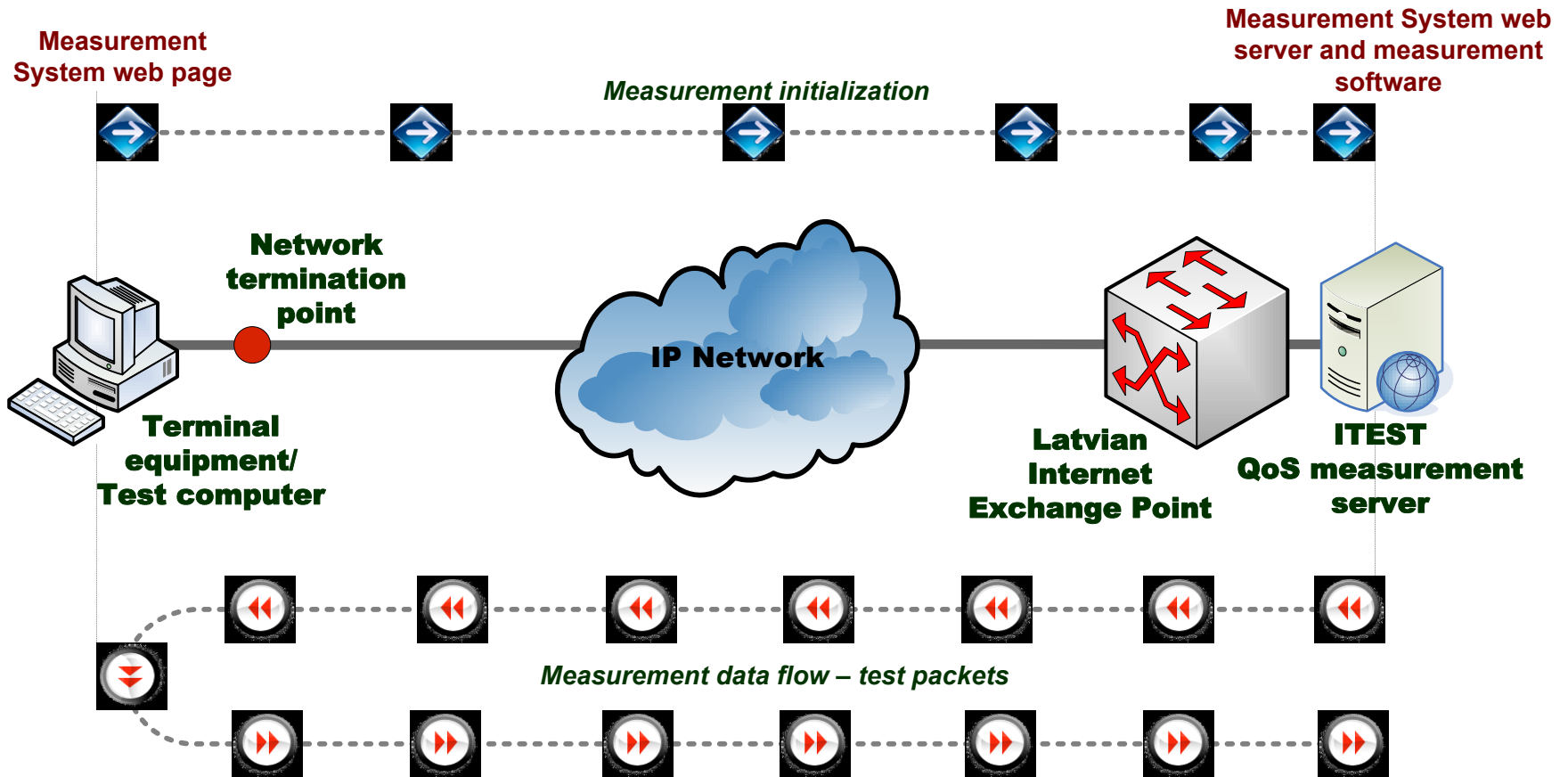
4G coverage map 2015 – «Tele2»



4G coverage map 2015 – «BITE Latvija»



ITEST measurement principles

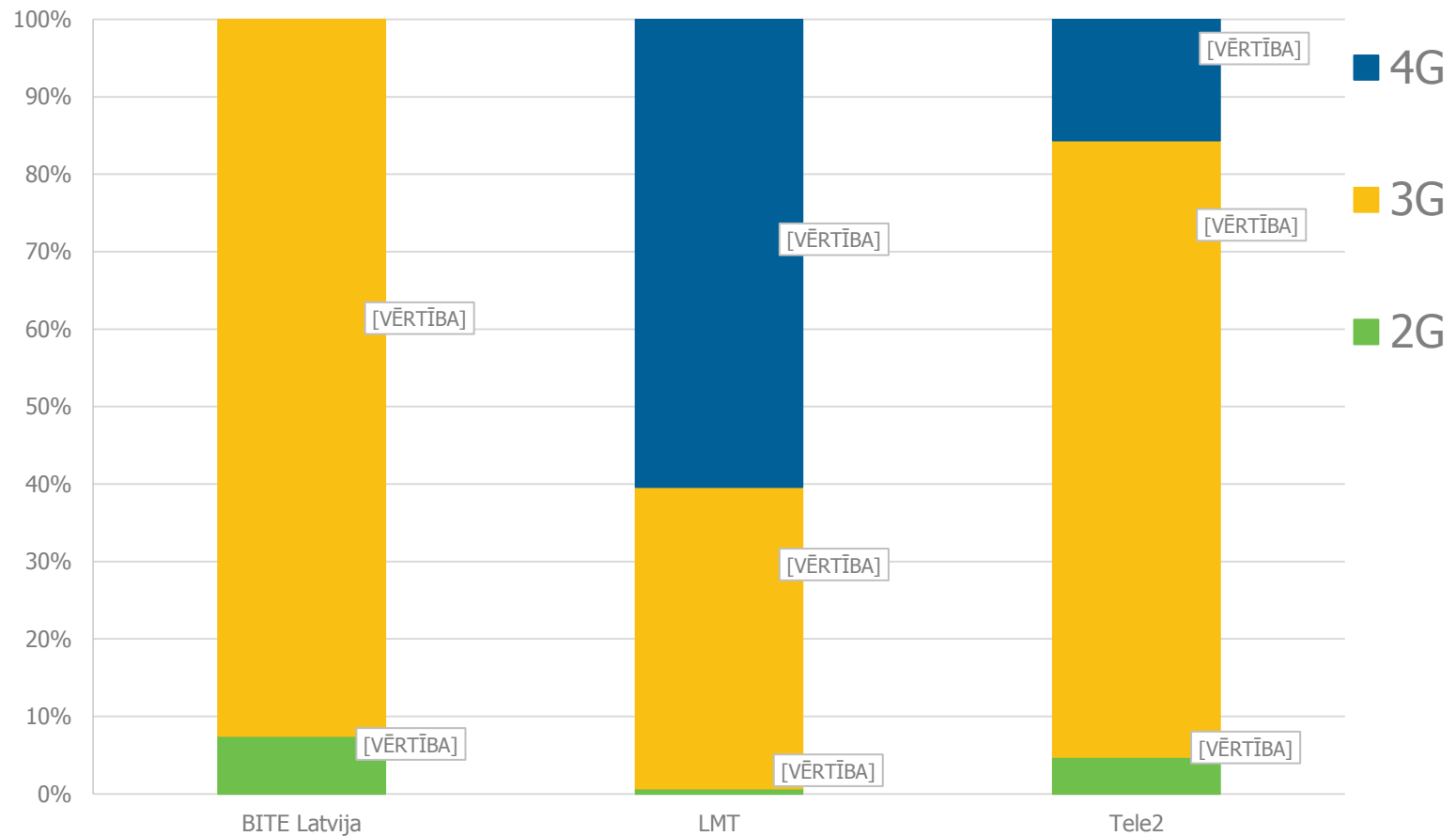


Measurement software engine supported by Visualware Inc.

Internet services coverage by technologies 2014



DATA TRANSMISSION SERVICES AVAILABILITY BY TECHNOLOGIES* (%)

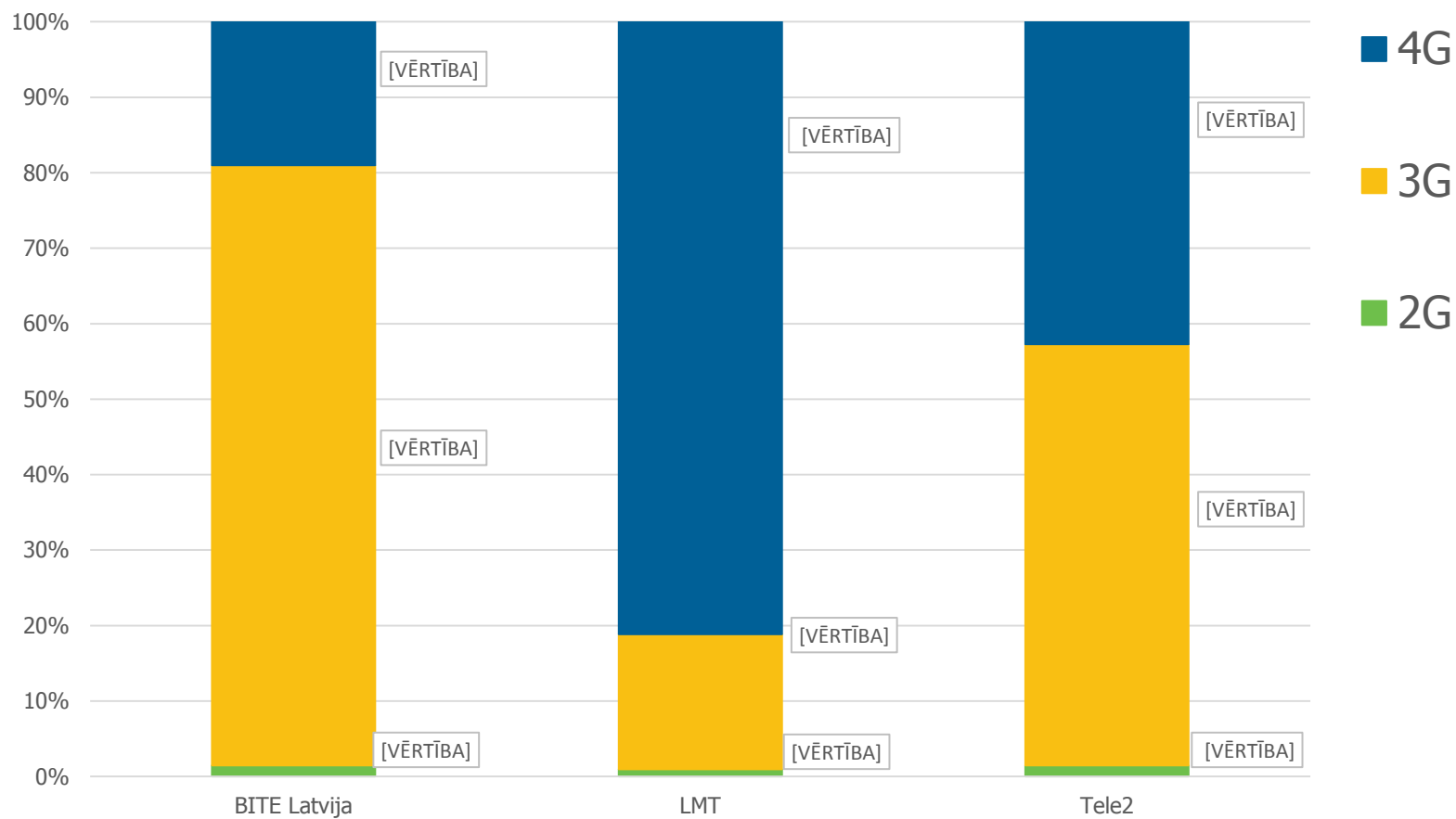


*QoS regular measurements data 31DEC2014

Internet services coverage by technologies 2015



DATA TRANSMISSION SERVICES AVAILABILITY BY TECHNOLOGIES* (%)

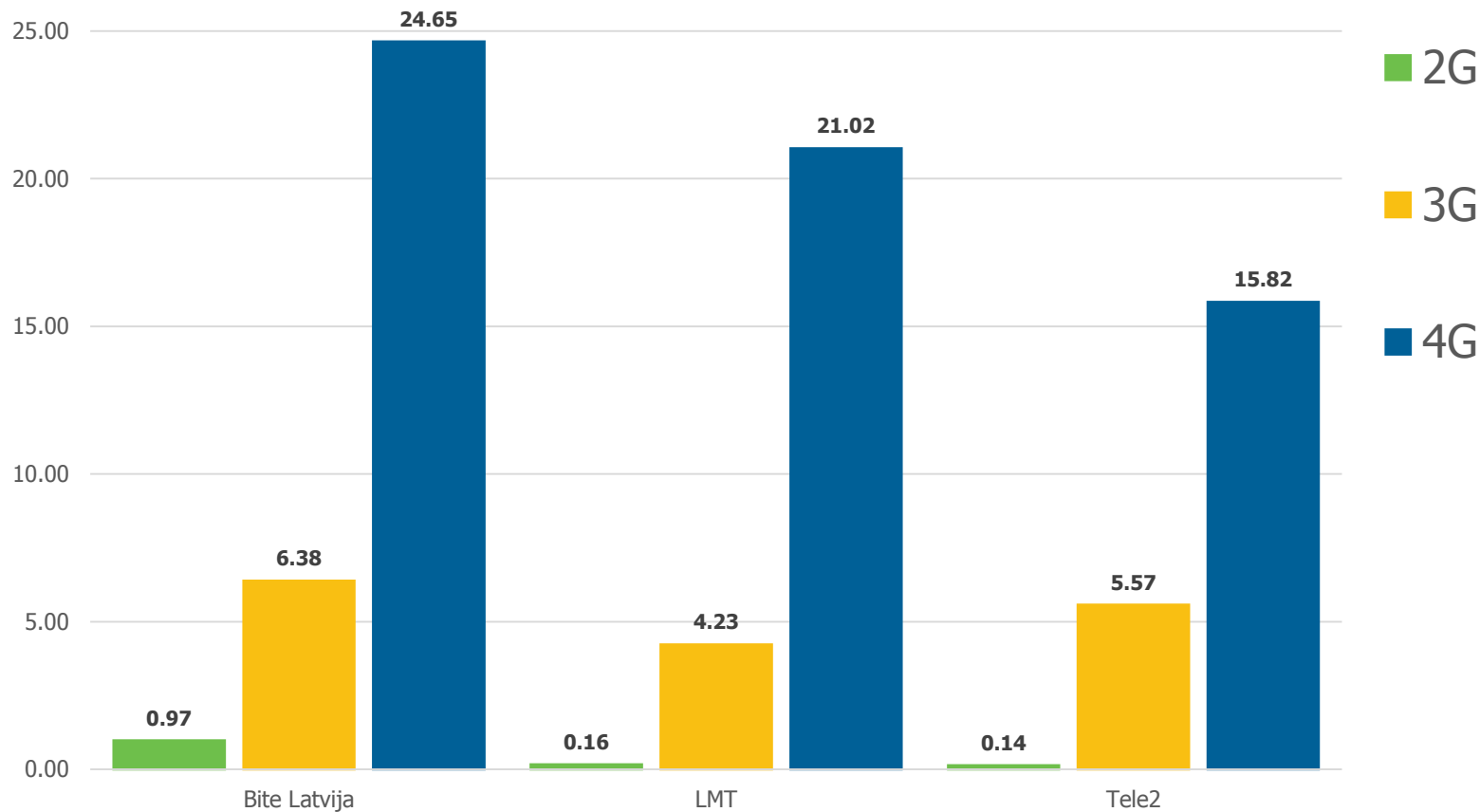


*QoS regular measurements data 30SEP2015

Data transmission speed values

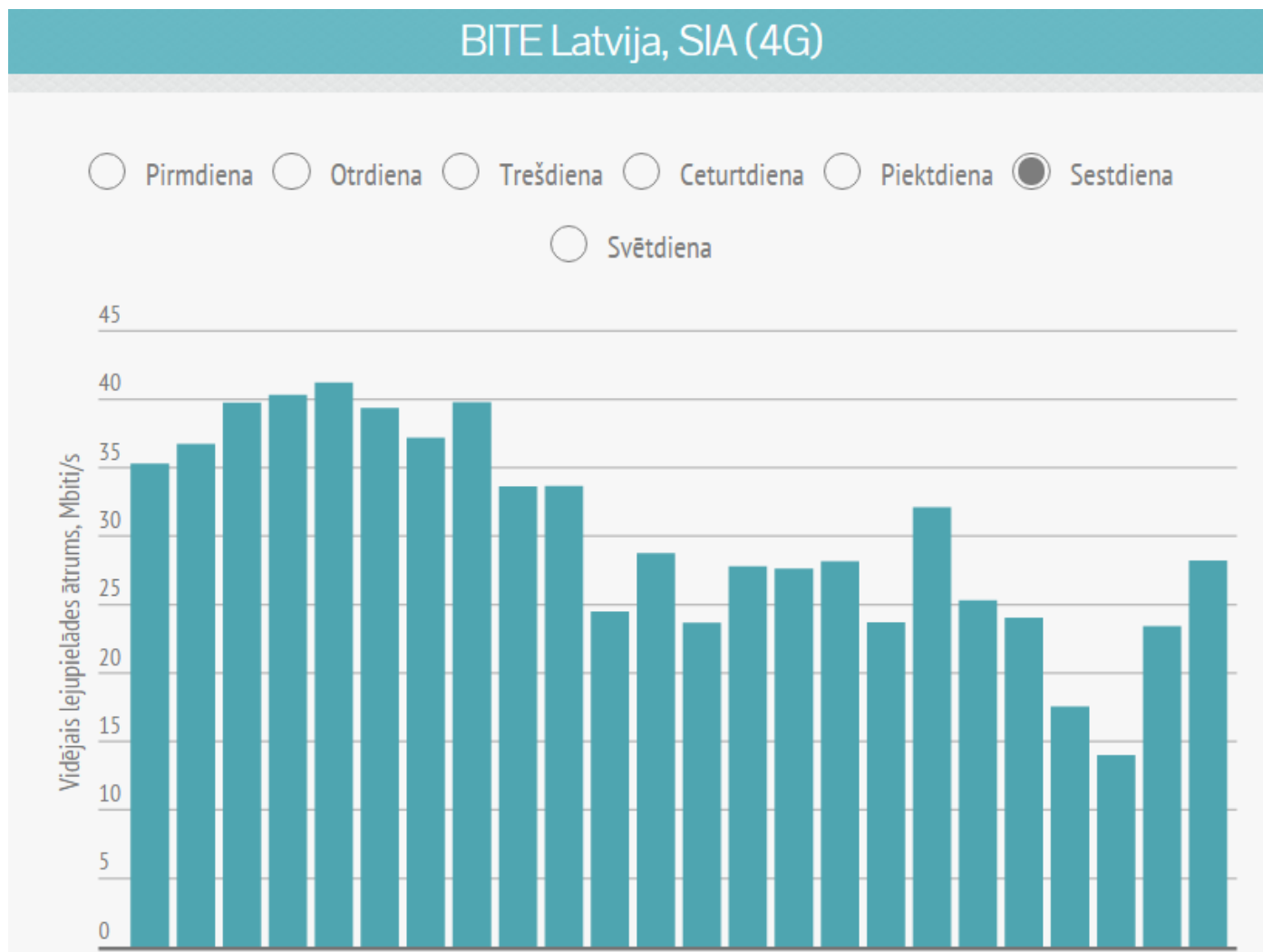


AVERAGE DOWNLOAD SPEED* (Mbps)



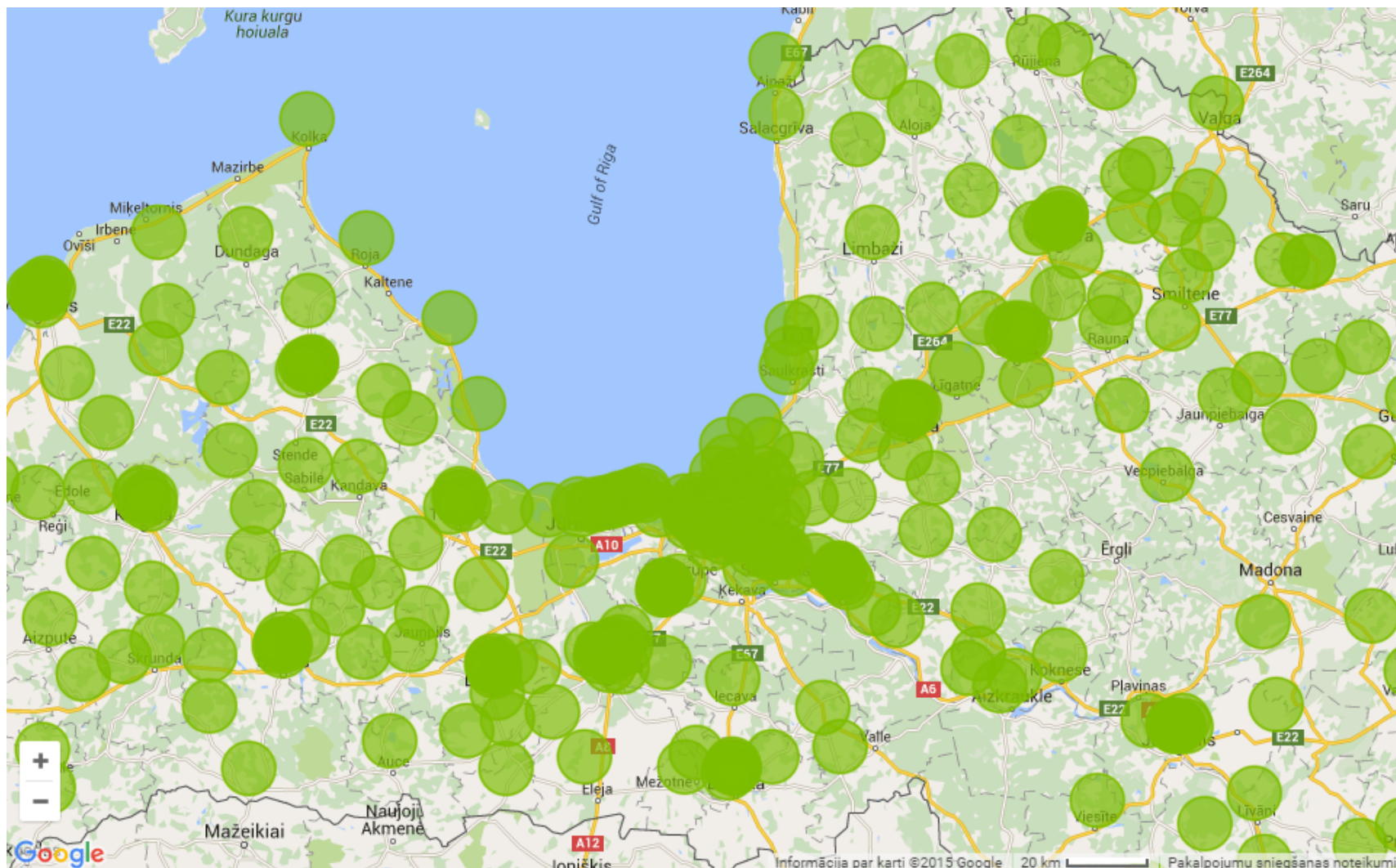
*QoS regular measurements data 30SEP2015

Internet monitoring measurements* made by SPRK



*SPRK QoS measurements data 2015

Internet measurements* places made by SPRK across country in 2015



* QoS regular measurements data 31OKT2015



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THANK YOU FOR ATTENTION

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