



School Net Case study of Polish socio-economic drivers aid scheme



The very beginning of OSE

25TH

SEPTEMBER 2013:

The Commission's
Communication "Opening
up Education (...)"

„One of the key
problems with modern
education in many schools
is the lack of availability of
equipment and high-speed
broadband network as well
as unprepared teachers to
apply modern technology
in teaching.”

22ND

DECEMBER 2015:

Plan of Ministers for Digital Affairs,
for National Education and for
Science and Higher Education

Plan on Digital Education actions &
interventions

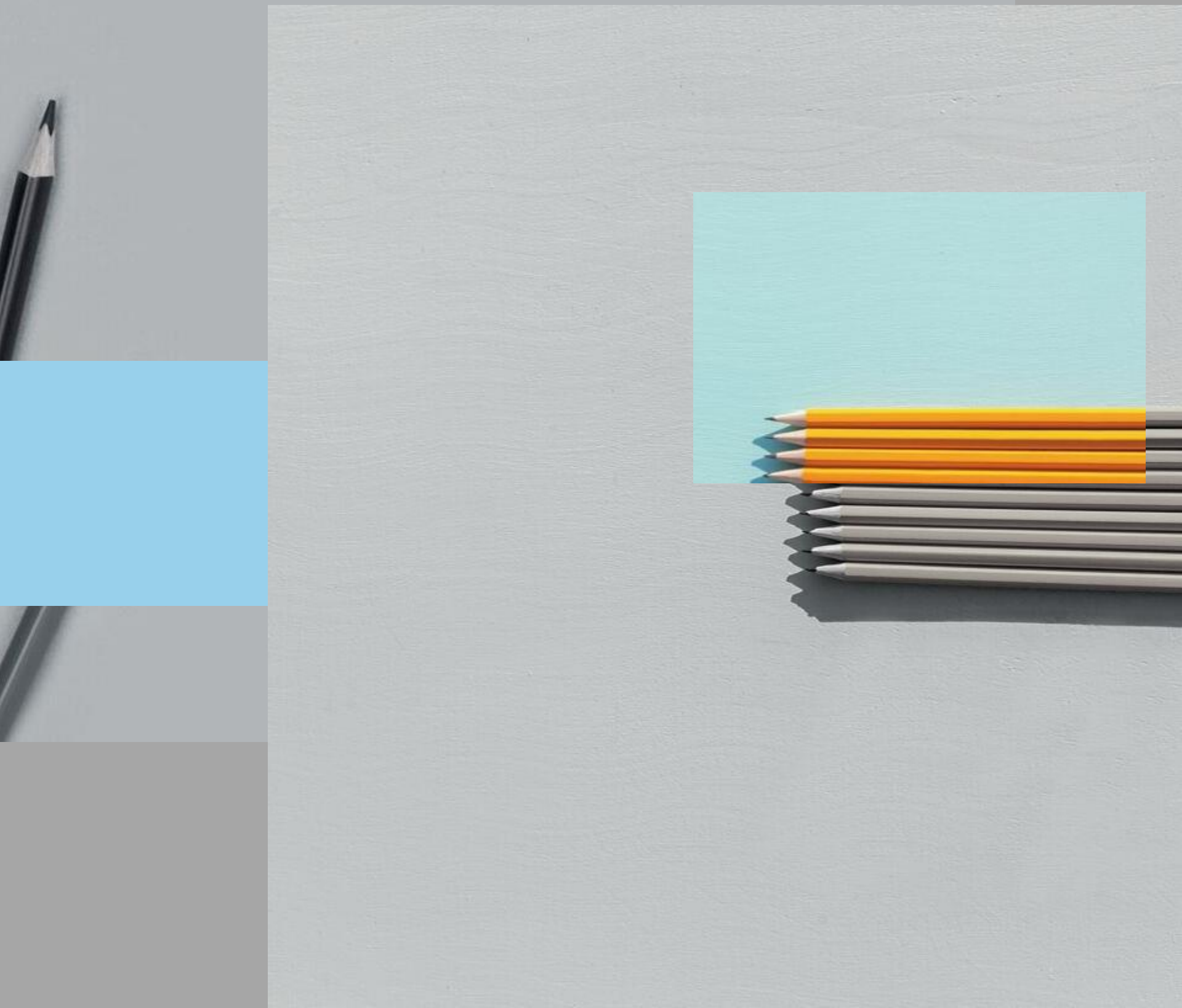
OSE Idea emerges

The idea for digital education

EVERY
SCHOOL WITH HIGH-SPEED
INTERNET ACCESS – AT LEAST
100 MBPS SYMMETRICAL

Digital resources & tools
in education

INCREASED DIGITAL SKILLS
AND COMPETENCES



And so we started...

AS PART OF THE PREPARATIONS FOR THIS TASK, IN THE FIRST HALF OF 2016, AN INVENTORY OF THE STATE OF INTERNET ACCESS IN SCHOOLS WAS CARRIED OUT:

- the Ministry of National Education together with the Ministry of Digital Affairs conducted a survey among schools and institutions included in the Educational Information System
- the Ministry of Digital Affairs carried out open public consultations, under which telecom operators could submit investment plans in the area of – among others - connecting educational units to high-speed Internet
- the Office of Electronic Communications, based on the conducted inventory of telecommunications infrastructure and services, conducted an analysis of information on the access of educational units to broadband infrastructure



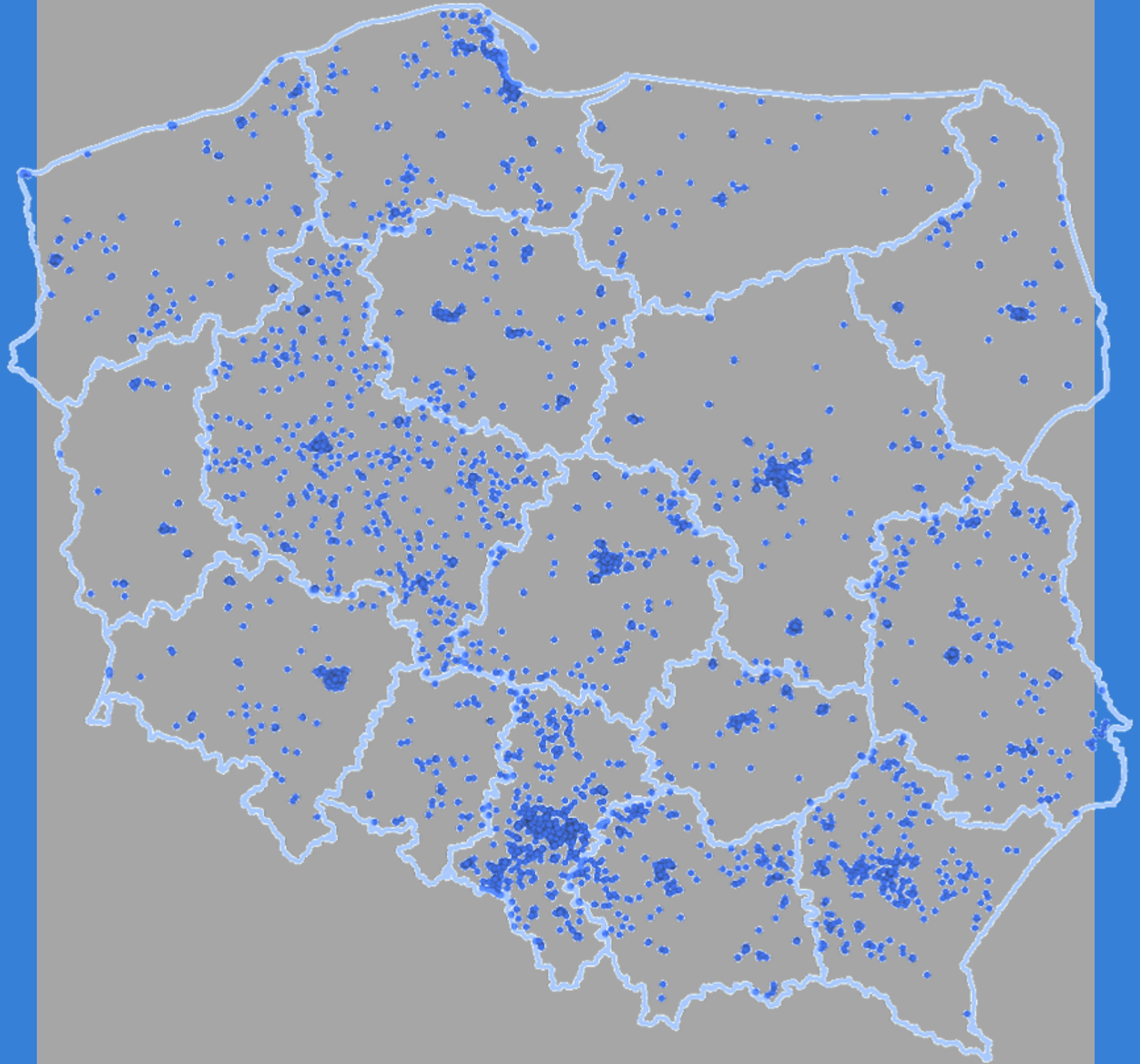
Challenges – access to internet in schools (first step) as of the beginning of 2016

- Total scope - 19.500 locations (address points)
- 4.4k APs with access to at least 100 Mbps /existing infrastructure/
- 5.7k APs to be connected on commercial basis /investment plans/
- Remaining APs – must be connected otherwise



Challenges – access to internet in schools (first step) as of the beginning of 2016

- Approx. 23% of units were within the scope of the Internet access network with a bandwidth of at least 100 Mb/s
- 100 Mbps service had been provided in approx. 1.2k locations



Solution – Operational Programme Digital Poland Ist axis – general overview

Common access to high-speed internet

Support for NGA networks rollout

- min 30 Mbps for households
- min 100 Mbps for schools

1.020B EUR

Additional 726k households with high-speed access

Interventions in economically inviable
suburban/rural/remote areas

GBER-based subsidies



Solution – Operational Programme Digital Poland Ist Axis – general overview

- 4 calls for projects
- 54 beneficiaries
- 160 projects
- Investments value – **1.55B** EUR
- OP DP funding – **900M** EUR
- Beneficiaries own contribution – **655M** EUR
- Whole country covered
- **1.982M** households – 273% of 1st Axis goal
- **13k** schools connected
- **109k** km of broadband infrastructure deployed

**SOLUTION –
OPERATIONAL
PROGRAMME
DIGITAL POLAND
1ST AXIS – TECH
REQUIREMENTS**

AT LEAST

100/100 Mbps

LATENCY

25 ms (75 ms in `extreme` investment conditions)

JITTER

0,5 ms (15 ms)

PACKET LOSS

0,05 % (1 %)

ALL GUARANTEED

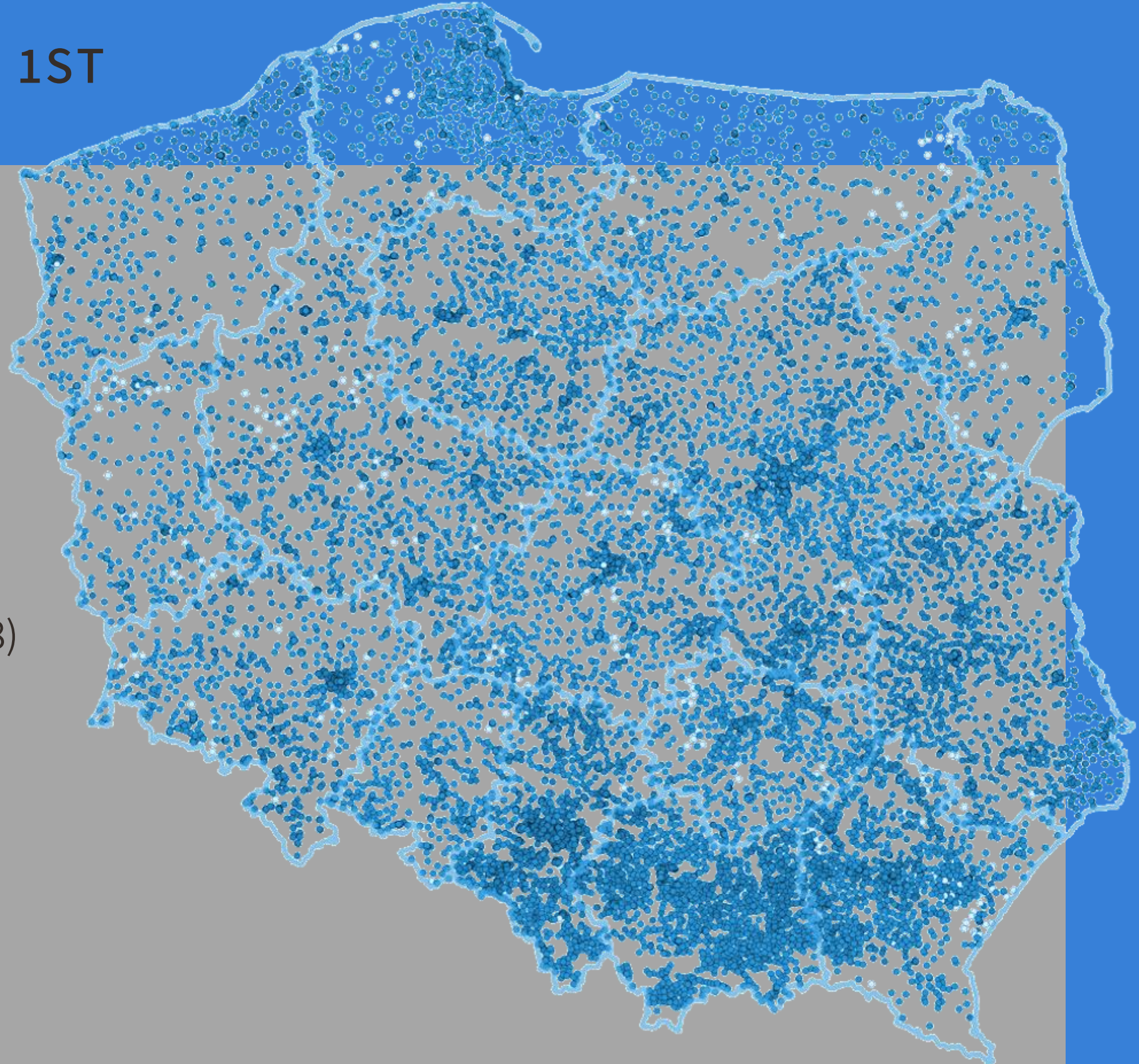
for 99,5% of yearly availability of the services

YEARLY AVAILABILITY

99%

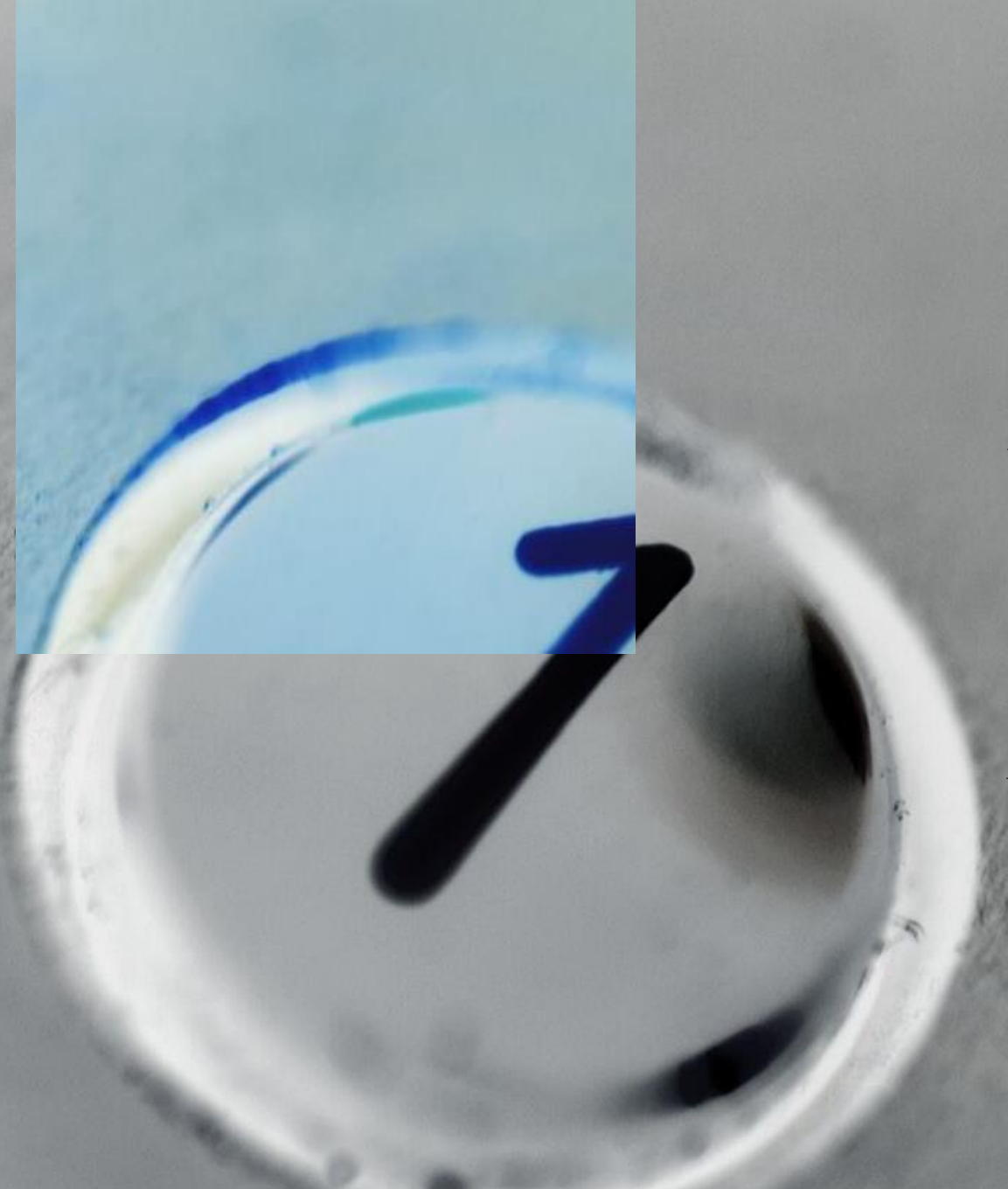
SOLUTION – OPERATIONAL PROGRAMME DIGITAL POLAND 1ST AXIS – AFTER INTERVENTIONS

- 1st call OP DP
200 schools connected
- 2nd call OP DP
9k schools connected by the end of 2019
(7k schools connected till September 2018)
- 3rd&4th call OP DP
4,3k schools connected
- Commercial connections
approx. 7k locations



IN THE MEANTIME -
FIRST RUN OF OSE (PILOT)

Ministry of Digital Affairs



At the beginning of 2016, future OSE Operator (NASK) had run a pilot project. The idea was to deploy links of 1 Gbps to several primary and secondary schools

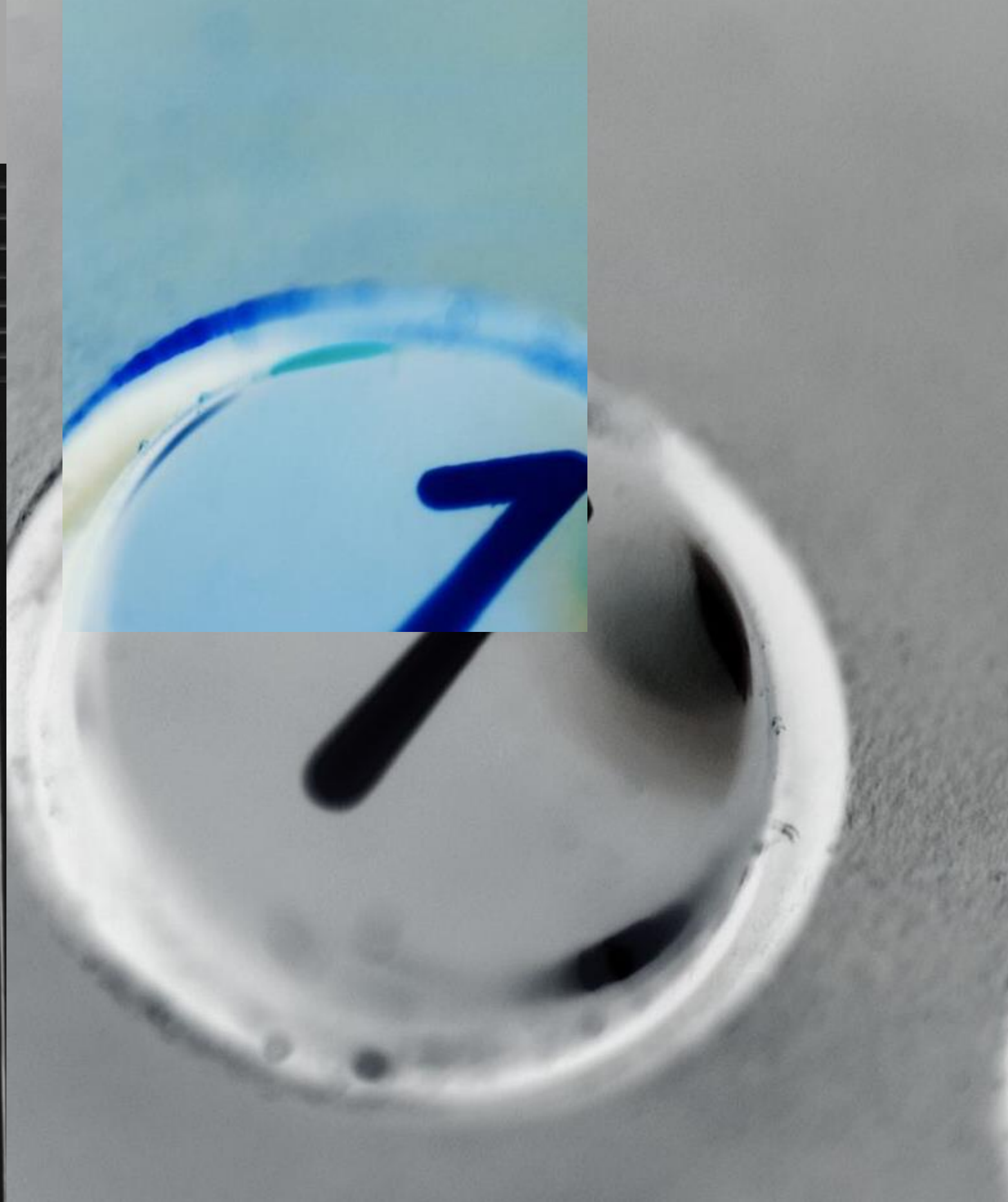
PROJECT AIMED AT:

- developing and implementing a technical model
- obtaining cost and data consumption figures
for providing broadband Internet to schools on a national scale
- additionally - providing multimedia applications and services of didactic nature

PILOT WAS THE BASE FOR THE FINAL CONCEPT OF OSE SERVICES

IN THE MEANTIME – LEGAL BASIS

- The decision on establishing OSE was politically agreed on by the Polish government (Council of Ministers) on 13th June 2017
- On 28th November 2017 Polish Parliament adopted the OSE Act, which provides legal frame for its functioning (goals and objectives, guarantee of financing from state budget etc.)



In the meantime – legal basis

PROJECT
OF OSE ACT

June 2017

OSE ACT IN
THE COUNCIL
OF MINISTERS

September 2017

OSE ACT IN
PARLIAMENT

October/November
2017

OSE ACT
SIGNED BY THE
PRESIDENT

November 2017



OSE - legal basis

Legally, OSE is a public network established to:

- provide at least 100 Mbps symmetrical services
- provide advanced cybersecurity measures
- support students/teachers with developing digital skills (not a subject of this presentation)
- provide knowledge for smarter ICT-usage habits (not a subject of this presentation)

run by NASK (Research and Academic Computer Network – National Research Institute)

based primarily on existing infrastructure

OSE - legal basis

beneficiaries – primary and secondary schools

subscription to OSE services – non-mandatory

costs of services:

- „standard” 100 Mbps symmetrical service – free of charge
- higher quality – individual charge above 100 Mbps
- cybersecurity measures – always free of charge

no income on OSE operator level

financing – state budget (311M EUR in 10 years)

operation phase started 1st September 2018



OSE – implementation structure

PHYSICAL INDIVIDUAL CONNECTIONS & EQUIPMENT

- OP DP broadband projects
- commercial investments
- OP DP individual project

CORE NETWORK

- OP DP individual projects
 - infrastructure
 - cybersec systems

ALL IMPLEMENTED IN PARALLEL

CORE NETWORK - INFRASTRUCTURE (42M EUR)

Direct link between each school connected to OSE (3 central/16 regional nodes)

CORE NETWORK – CYBERSEC SYSTEMS (42M EUR)

URL filtering system

Web application filtering system – real-time monitoring, blocking apps that compromise network and/or user security

Anti-Virus, Anti-Malware

Tools to respond to behavioral threats

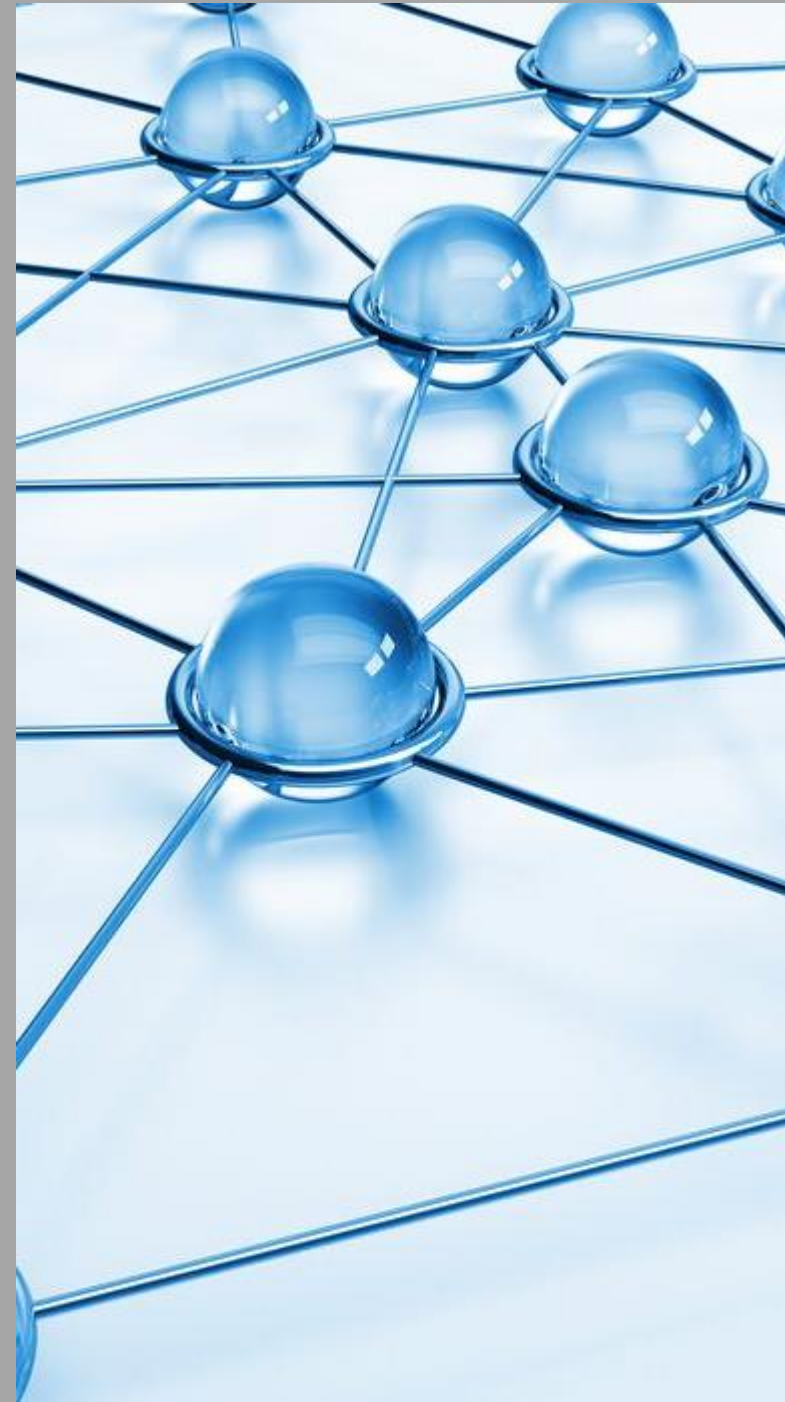
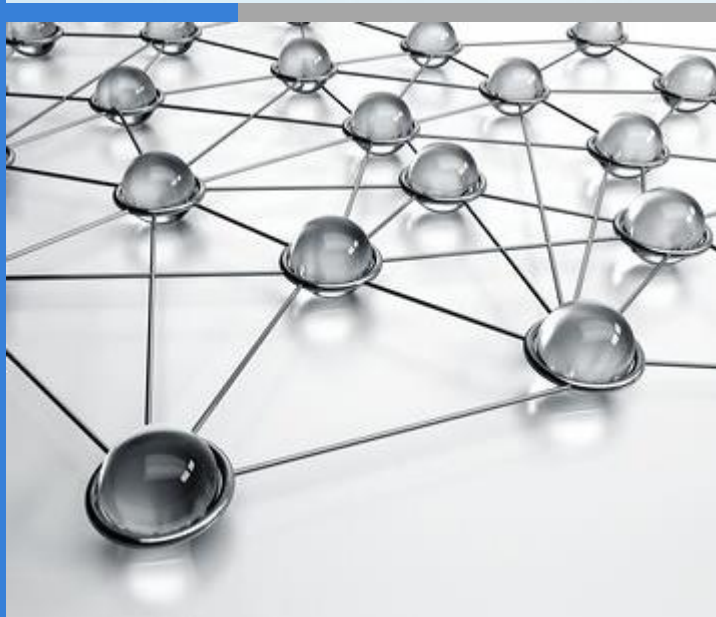
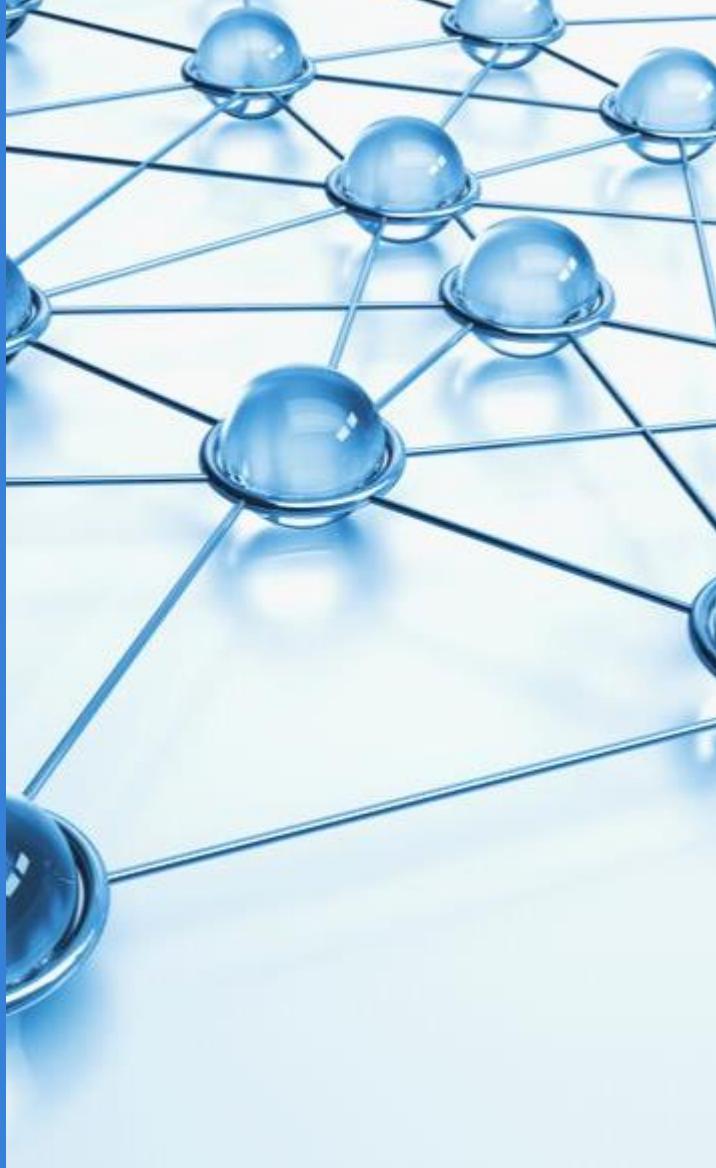
Ministry of Digital Affairs

OSE – OP DP INDIVIDUAL PROJECTS

EQUIPMENT (44M EUR)

- CPE
- Switch 24J
- Access Point
- additional equipment necessary to reach OSE services in school





To
access OSE services,
school should

- be physically connected (or in the foreseeable future)
- exist in region which is already in range of the core network (or in the foreseeable future)
- be included in connections schedule

CONNECTIONS SCHEDULE IN SIMPLE TERMS

- OSE operator – bound to lease physical connections – organizes open, non-discriminatory tenders to access those connections (for a „package” of schools in a small area, each tender means several „packages”)
- if a tender proves successful for a package (meaning an operator/operators came into contract with NASK), all schools from that package are placed in OSE connections schedule
(if unsuccessful – try again)
- school placed in the schedule may now subscribe to OSE
- after subscribing, OSE operator has no longer than 6 months to run services



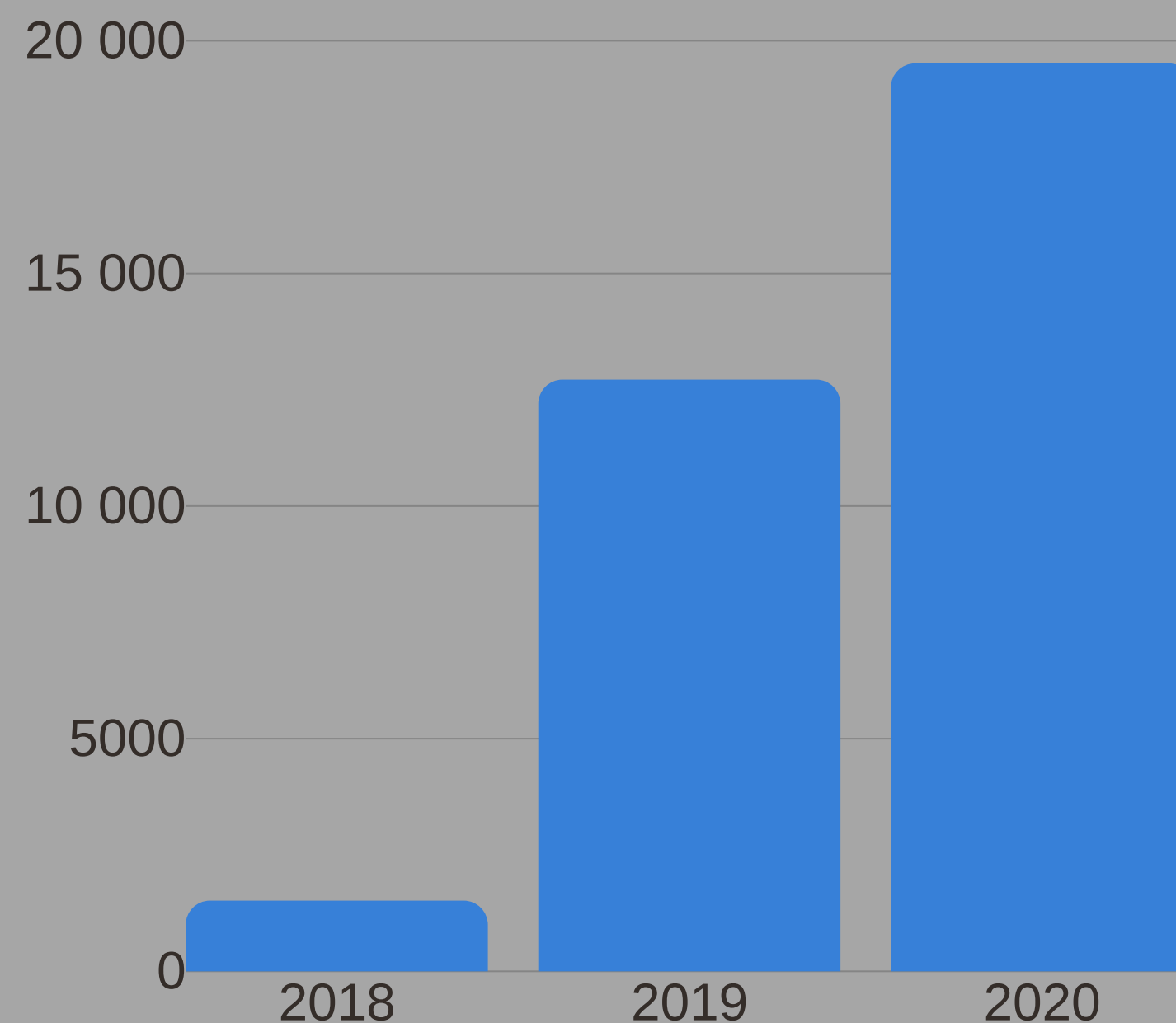
OSE – back to logics

Implementation is foreseen for 3 years, each targeting an initial number of schools in range of OSE services:

- 2018 – 1.5k locations
- 2019 – 12.7k locations, OSE available in every Polish region
- 2020 – 19.5 locations (final target)

13 439 schools in schedule as of 17th September

As of 1st January 2021, all schools in Poland should mandatorily subscribe to services of at least the standard provided by OSE



OSE – advantages

ADVANTAGES FOR SCHOOLS:

- free of charge access to high speed Internet
- security services – user safety
- basic package of devices ensuring connection to OSE Network
- digital tools and educational materials

ADVANTAGES FOR LOCAL GOVERNMENT UNITS:

- wider access to Internet resources
- communication and knowledge exchange (parents, municipal entities cooperating with the schools)
- clear perspective – residents to be educated, more aware of the world, its resources and threats
- savings – OSE services are covered by the state budget





First
international
OSE
accomplishment

OSE
PROJECT HAS BEEN
AWARDED BY
ITU AT
WSIS PRIZES 2018.

ACTION LINE C1
THE ROLE OF PUBLIC
GOVERNANCE AUTHORITIES
AND ALL STAKEHOLDERS IN
THE PROMOTION OF ICTS
FOR DEVELOPMENT

DOMINIK KOPERA

Acting Deputy Director

Department of Telecommunication

Ministry of Digital Affairs

