



Broadband4Everyone
A1 Hrvatska

Introduction



Introduction

- Project beneficiary: A1 Hrvatska d.o.o
- Project partner: City of Solin
- Start/end of the implementation:
31/7/2022-31/12/2023
- EU BB category: Demand generation and
take up of connectivity



Project context



Project context

- The exclusion of certain areas from the development of the digital economy significantly limits balanced regional development and cohesion with the developed regions of the EU.
- The Republic of Croatia lags behind the average of EU member states in the number of broadband access connections, it is characterized by a large number of white areas in which there is not sufficient commercial interest for investments in infrastructure development, and there is a significant unevenness in the number and density of connections by county and municipality
- In 2019 (at the moment of project application), overall DESI for Croatia was 47,4 which ranked us in 20th place, while in the key category Connectivity was ranked at penultimate 27th place
- Bridging the 'digital divide' and ensuring full coverage with high-speed broadband access requires the construction of next-generation broadband access networks throughout the entire territory of the Republic of Croatia

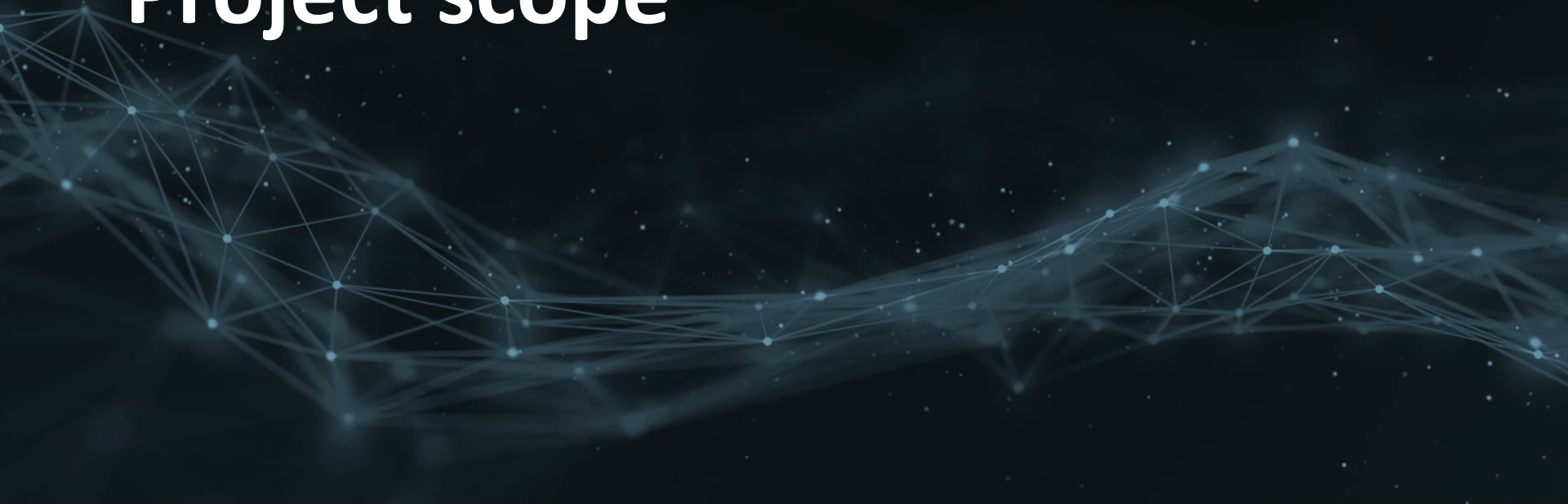
DESI overall
in 2019

20th place

DESI connectivity
In 2019

27th place

Project scope



Project scope | Location

- The Project is implemented in the local municipality, the City of Solin, which is located in the Split-Dalmatia county, 5 km northeast of the City of Split.
- The total area of the project area is 18 km².
- In the area of the City of Solin, there are a total of 5,043 addresses, among which the share of white addresses is almost 40%.
- The target area of the project implementation are all locations, that is, addresses in the scope of the project where the end users are located (2,904), which were marked as final white areas.



Project scope | Problem & Purpose



Central problem

- implementation of VHCN broadband infrastructure in the entire territory of the Republic of Croatia was unsatisfactory and uneven as the consequence of the lack of commercial interest on the part of operators and service providers in the market



Project purpose

- to increase the national coverage of VHCN by investing in the construction of a network in an area without broadband infrastructure and without sufficient market interest.



Project budget

2,1 mil EUR

Project scope | Activities

1

Preparation of technical documentation and obtaining all necessary permits for the construction, as well as supervision during and after the construction of the network

2

Construction of the broadband infrastructure

3

Equipping network access nodes (active and passive)

4

Promotion and visibility of the project

5

Project management

*the audit will be carried out after the end of project implementation.

Project scope | Technology

- With this Project, A1 Hrvatska built an access fiber to the home (FTTH) network and, to a lesser extent, mobile networks (LTE and/or 5G). FTTH is the primary technology for the Project realization and covers most of the covered area while LTE and/or 5G is used to cover peripheral and hard-to-reach areas.
- Some advantages of the FTTH network are:
 - **High-speed Internet:** FTTH provides ultra-fast internet speeds, with the potential to deliver symmetrical speeds of up to 100 Mbit/s or higher. This means that the end user can download large files, stream 4K videos, and play online games without any buffering or lag.
 - **Reliability:** Fiber optic cables are less susceptible to interference and degradation than traditional copper wiring. The FTTH network is less likely to experience outages or slowdowns during peak usage periods, offering more reliable service.
 - **Enhanced user experience:** With FTTH, users can enjoy real-time gaming without lag, video conferencing, and other data-intensive applications without any disruptions.
 - **Future-proof:** Fiber optic cables have a much higher bandwidth capacity than traditional copper wiring, which means fiber networks have the potential to support future technologies like virtual and augmented reality, 8K streaming, and more.

Project scope | Technology

- The FTTH network implies an access network made using optical fibers between the end users and the operator's first aggregation node.
- A1 Hrvatska used the right of joint use in the existing infrastructure whenever possible from Hrvatski Telekom d.d., poles from HEP d.d. - Croatian Electricity Company, as well as to available infrastructure owned by municipalities
- During construction, most of the construction was aerial (over 90%), while the existing ducts were used to a lesser extent and where necessary, the mini and micro trenching method was used
- Within FTTH network in the City of Solin, 7 Distribution Points and 1 Metro Point of Presence were located



Green component



Green component

- A1 Hrvatska installed solar panels on one basic telecommunication station which was built on the peripheral, more difficult to reach parts of the Project scope.
- 10 years ago, A1 Hrvatska was leader in this field using innovative technology of a hybrid eco model using sun, wind and hydrogen fuel cells for powering BTS.
- These pilot projects have shown that the best practice solution is solar plants that is economically the most viable and provides best climate results for BTS.
- The solar panels will annually produce 38.400 kWh of electric energy which is equal to annual savings of 9 t CO₂.
- Also, A1 Hrvatska is implementing another EU project financed through LIFE programme → LIFE4GREENBROADBAND



Financing model




Financing model

- The largest source of financing is private funds (A1 Hrvatska), while the rest is EU support → Operational Programme Competition and Cohesion
- The total amount of the grant (EU financed) is 995.314,69 EUR, while the A1 Hrvatska's share (private funds) is 1.036.238,88 EUR. → EU funding rate: 48,65%
- Total Projects cost is 2.089.557,50 EUR.
- Ineligible investment costs in the total amount of 43.777,54 EUR are financed by the A1 Hrvatska.
- The newly built network is an open access network with clearly defined wholesale fees and terms approved by the National Regulatory Agency → prices are defined based on the benchmarks and A1's standard offer is publicly available
- Chosen business model: operator subsidy model, also known as gap funding or private DBO → A1 Hrvatska, is responsible for planning and building the network and managing it



Challenges during project implementation



Challenges during project implementation

COVID-19 pandemic

supply chain
disruption

failure of public law bodies to
act within the legally
prescribed deadlines

challenges in the installation
of mobile infrastructure
(regulation and fear of EMF)

Project impact



Project impact | Business



- The structure of companies is dominated by micro, small and medium-sized companies
 - New opportunities for companies will have an impact on the internal level and the external level
-
- Companies have the potential to expand and strengthen their business
 - Ultra-fast internet favors trade (wholesale and retail), import/export, education, etc., therefore the impact of the Project on entrepreneurs is multiple.

Project impact | Public & social



- The key categories where effects are expected are:
 - ✓ a decrease in the share of people who have never used the Internet
 - ✓ control and supervision of the environment,
 - ✓ traffic,
 - ✓ infrastructure, and
 - ✓ the maximum utilization of existing resources in order to achieve a higher quality and standard of living.
- The presence of broadband internet is a prerequisite for communication, business, but also part of the tourist offers because it allows tourists greater control and access to information, more personalization, and a greater customer experience.

Project impact | Summary



*which are located on white areas within the defined spatial scope of the project

A night-time aerial view of a city skyline, featuring numerous illuminated skyscrapers and buildings. Overlaid on the cityscape is a complex network of glowing lines and dots in various colors (blue, purple, pink, white), resembling a digital or data network. The lines connect various points across the city, with some extending vertically towards the top of the frame. The sky is a deep blue, and the city lights create a vibrant, futuristic atmosphere.

Q&A