Co-financed by the Connecting Europe Facility of the European Union

14th Meeting on the Follow-up of the
Joint Statement on Guiding Principles on the Development of Inland Navigation and Environmental Protection in the Danube River Basin
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Innovation and modernization of lock chambers to increase the safety and intensity of water transport on the Iron Gate I and II

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Iron Gate I

General data, financing and objectives of the upgrade works on the Iron Gate I Navigation Lock

- The Iron Gate I (Djerdap I) navigational lock is located on the **rkm 943** of the joint Serbian-Romanian stretch of the Danube River
- Navigation on the Danube River **is highly internationalized**, as the infrastructure is being used by shipping industry from all riparian countries
- **78% of the overall transport operations on the Danube River have an international character** and only 22% are domestic operations (data differs from country to country).
- Annually, **more than 10 million tons of cargo** are being locked on the Iron Gate I navigation lock system (including both Serbian and Romanian navigational lock).

Photo 1: Iron Gate I navigation lock chambers and foredecks after the performed upgrade

Iron Gate I

- Lock operations are **free of charge** for users
- The Iron Gate I navigational lock was **erected in 1972**
- The Iron Gate I navigation lock operator has **performed partial investment and maintenance activities** in the period **2011-2015**
- The result of inability to perform overall major reconstruction and upgrade, created **additional pressure on the navigation lock on the Romanian side of the river**
- For the integrated and synchronized reconstruction and upgrade of the lock infrastructure, a **financial assistance from the EU was considered** as extremely necessary

Photo 2: Iron Gate I navigation lock electro-hydraulic features after the performed upgrade

Iron Gate I

- In 2017, the MGSI took initiative and proposed the Action titled Upgrade of the Iron Gate I Navigation Lock for financing under the **CEF** (Connecting Europe Facility) Programme of the European Union; in total **EUR 28,500,000**

- The Grant Agreement was signed **with INEA in November 2017**, being the first mono-beneficiary project funded under the CEF Programme in the Republic of Serbia. By this, the **40%** of the investment costs was secured.

- **In November 2019**, Finance Contract for the SERBIAN INLAND WATERWAY INFRASTRUCTURE between **the Republic of Serbia and European Investment Bank** was signed, providing the remaining **60%** of the investment costs for the Upgrade of the Iron Gate I navigation lock.

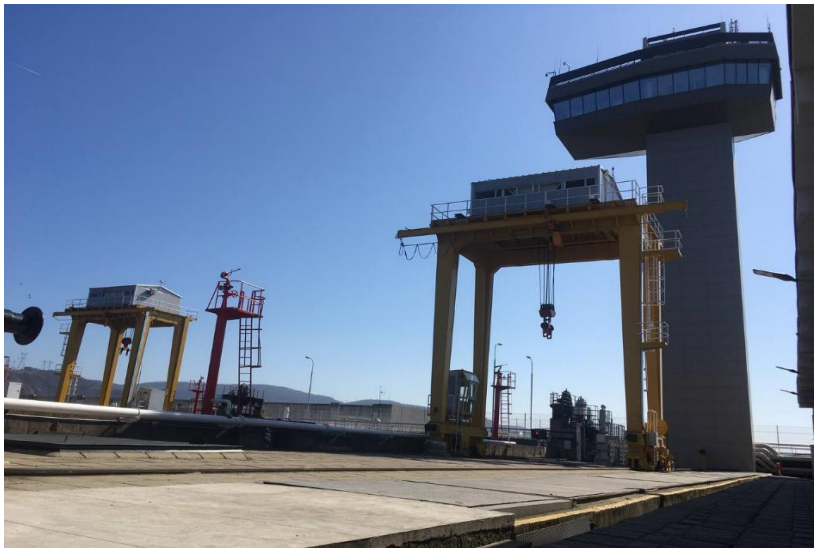


Photo 3: Iron Gate I navigation lock control tower after the performed upgrade

Iron Gate I

- The strategic objective set was to increase the efficiency, reliability and the competitiveness of the Danube waterway, as a part of the **Trans-European Transport Network (TEN-T)**.

- Project was considered to generate improvement of connections with the neighboring countries of the EU by strengthening the sustainability and stability of waterway transport conditions through Serbia, connecting the Member States from the Upper and the Middle (Germany, Austria, Slovakia, Hungary, Croatia) with the Lower Danube (Romania, Bulgaria, Ukraine, Moldova) riparian countries.

- The Upgrade of the Iron Gate I navigation lock represents a part of a wider Inland Waterway Transport Strategy of the Republic of Serbia for the period 2015-2025, aiming to increase competitiveness of the inland waterway transport system in the Republic of Serbia.

Photo 4: Iron Gate I navigation lock signalization and communication features after the performed upgrade

Iron Gate I

Methodological setup

- Major upgrade works on the Iron Gate I navigation lock have been performed in the period from the **06th of July 2020 until the 25th of July 2021**. During this period all the locking operations, both upstream and downstream, have been taken over by the Romanian Iron Gate I navigation lock.

- The upgraded Iron Gate I navigation lock was ceremonially opened on **26th of July 2021**, in the presence of the highest officials of the Republic of Serbia and the EU.

- The duration of the monitored pilot operation is **7 months and 5 days** (from the 26th of July 2021 until the 28th of February 2022).

Photo 5: Iron Gate I navigation lock power supply features after the performed upgrade

Iron Gate I

ACTIVITY
Name of the subsystem rehabilitated:

- Civil engineering and architectural works
- Electro-hydraulic equipment
- Hydro-mechanical equipment
- Ancillary system

Before	After
	

Photo 6: Iron Gate I navigation lock control tower gondola


Photo 7: Iron Gate I navigation lock engine room

Iron Gate I

The results of the upgrade works on the Iron Gate I

- The identified bottleneck on the Trans-European Transport Network (TEN-T) is removed;

- Improved locking performance (in the sense of operational reliability, duration, safety and energy efficiency);

- Reduced operational and maintenance costs;

- Reduced potential for traffic incidents and environmental incidents;

- Contribution to the positive perception of users due to improved reliability of the Danube waterway infrastructure;

- Improved competitiveness of the Danube waterway, as a part of the TEN-T Network

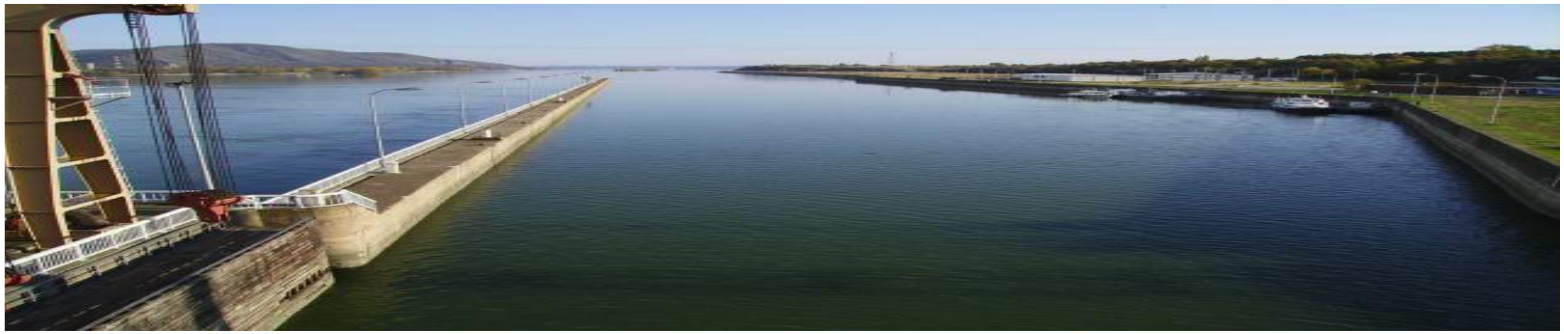


Photo 8: Iron Gate I navigation downstream foredeck area

Iron Gate II at Glance

Source: Iron Gate II

Djerdap II (Iron Gate II) navigational lock at glance

Erected in: 1994

Number of chambers: 1

Width of chambers: 34 m

Length of chambers: 310 m

Height available at middle head for passing: 12.5 m

Location: the Danube River, rkm 863

Waterway class: VII

Upstream fore-dock width: 100-180 m

Upstream fore-dock length: 510 m

Downstream fore-dock width: 100-180 m

Downstream fore-dock length: 510/100-180 m

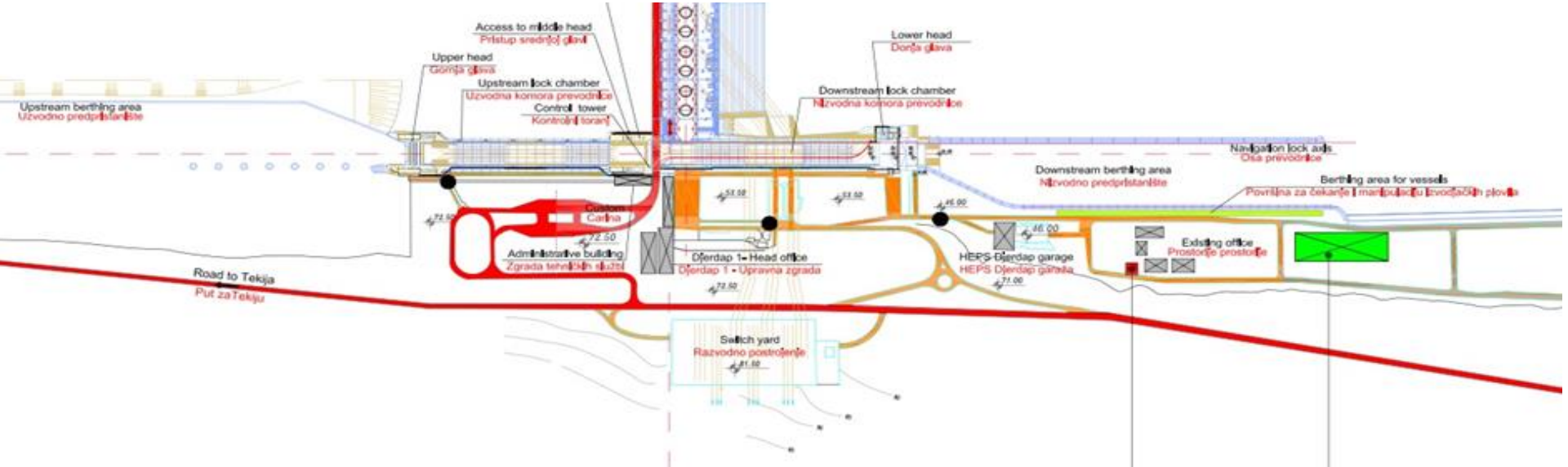
Iron Gate II

- **Project name:** Upgrade of the Iron Gate 2 Navigational Lock
- **Project value:** 32,000,000 EUR
- Works Contract 29,000,000 EUR; Supervision contract: 2,500,000 EUR
- **Project financing:** 40% grant received from CINEA and 60% finance contract - EIB
- **Investor**: MGSI
- **The final beneficairy**: Joint Stock Company Elektroprivreda Srbije
- **Contractor**: Consortium DSD Noel Nemačka (Leader of the consortium); Goša montaža AD Beograd (Consortium member); Hidro-Tan (Consortium member)
- **Contract duration:** 670 days
- **Date of signing the Contract:** Works contract signed on 22.03.2022; Supervision contract signed on 11.07.2022.

Iron Gate II

- **The main works will include**:

- Electro-hydraulic upgrade works
- Hydro-mechanical upgrade works
- Upgrade of ancillary systems of the lock
- Civil engineering and hydro-technical upgrades



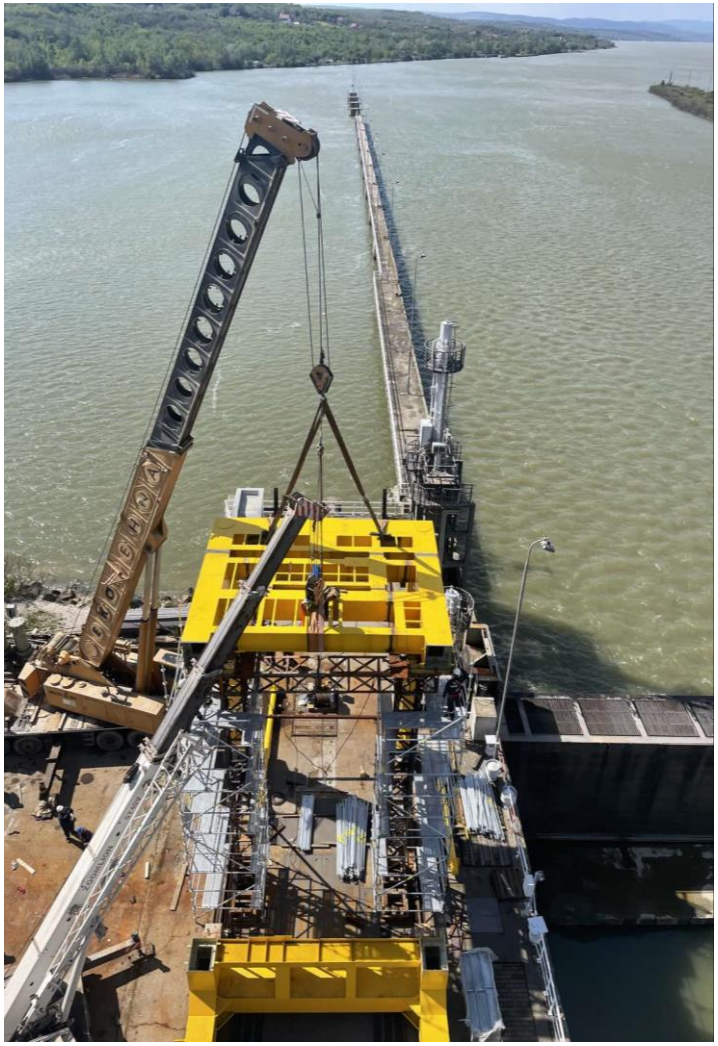
Iron Gate II

- The Specific Goals of the Project:
- Reduced number and duration of unforeseen stoppages and navigation interruptions
- Greater safety of ship lock operations
- Extending the working life of equipment and increasing energy efficiency
- Reduced operational and maintenance costs;
- Reduced potential for traffic incidents and environmental incidents;

Iron Gate II

- The Current State of the Project Implementation:

- Development of Detail Design is in progress
- Bringed the ship's lock into repair position with emptying it and starting the disassembly of the electrohydraulic and hydromechanics equipment
- Scaffolding around the control tower is underway
- Delivery of equipment to the site
- Erection and installation works on Upper Head River Side Gantry Crane



Iron Gate II

- Shiplocking operations during construction works:

- The equipment has been installed on July 18, 2023, and the upgrade will take no more than a year

- The nearby Romanian lock it is utilized while the Serbian lock is closed to ensure that traffic doesn't stop

- Announcement to different organizations and users of lock services was made via email

- An official NTS for the shipping sector was released.

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