**Digital**

# ACROT: TBM Risk Control and Operation Assessment

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**SENER DIGITAL / INFRASTRUCTURES / BRAZIL**

*ACROT: TBM RISK CONTROL AND OPERATION ASSESSMENT*

**Cliente: Sagrada Familia (Barcelona, Spain) Hi-Speed Line (supervised by UNESCO), Gerona (Spain) Hi-Speed Line, Trinidad--Montcada (Spain) Hi-Speed Line, Metro de Guadalajara (Mexico), Metro Fortaleza (Brazil)**

**País: Brazil**

ACROT by SENER is the **digital solution that reduces risk in works involving tunnel boring machines (TBM)**. Its use has already improved safety during construction works in Spain, Mexico and Brazil, being in urban and high-risk environments (such as subways and railway lines, at access points to cities) where it demonstrates its true potential.

The TBM Risk Control and Operation Assessment system (ACROT) offers you a **24-hour machine**

**monitoring system**, through an online work environment with permanent connection between ACROT team members, operators on site and TBM operatives.

ACROT captures data from tunnel boring machines through hundreds of sensors to control operations, detecting anomalies that pose a potential risk to the machine or to third parties. Thanks to the real-time analysis of this data flow and the support of our experts, operators can automate their decision-making and radically reduce any risks.

**Less risk, greater efficiency**

With ACROT, we improve productivity within your project and you will avoid catastrophic situations that are difficult to quantify. Risk reduction is essential for reducing unforeseen events during tunnel excavation works and it will **significantly** reduce your costs and operational lead times in the management.

Numerous international teams are now using ACROT in tunnel construction, but its digital architecture allows it to be applied in the operation or maintenance phase. It is an expanding product with great possibilities in the immediate future.

# 24-hour TBM monitoring system

# Reduces risk in urban tunnels

# Avoids unnecessary costs and shortens lead times

**WHAT DOES ACROT DO**

- Fusion between analog and digital thinking.

- Ability to apply prescriptive analytics.

- Digitization of tunnels from the design phase to the operation phase.

- *Machine learning* and data mining.

- Fully online control system, which provides a 24-hour service from the control center in Spain to any TBM anywhere in the world.

- Web platform EXCAVA wholly owned by SENER for the analysis and storage of TBM data (2+ million data per TBM per hour).

- Interactive ACROTDigital platform accessible 24 hours a day.