



NEXT-GENERATION IoT PLATFORM WITH BUILT-IN INTELLIGENT ALGORITHMS

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AFTER WATER, CONCRETE

is the most widely used substance on the planet claims The Guardian. It's extremely robust, durable, versatile, and malleable - all at the same time.

Concrete is the foundation of modern development, putting roofs over the heads of billions, fortifying our defences against natural disasters, and providing a structure for healthcare, education, transport, energy, and industry. Yet there's a catch.

THE ISSUE

From the time wet concrete is being poured, and throughout the whole life cycle of the concrete product, many important issues and parameters (such as humidity, temperature, pressure, and load) must be adequately considered to ensure its safe and reliable operation.

Material limitations, design and construction practices, and severe exposure conditions can cause concrete to deteriorate, which may result in aesthetic, functional, or structural problems.

Therefore, to eliminate the possible damage and even collapse of the construction that are due to poorly poured concrete, it is essential to **monitor concrete quality** continually, especially within the first year of pouring.

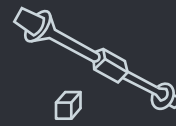


Although there are several similar solutions for monitoring concrete structures in the world, they have shown to have few gaps:

- ⊗ The measurements made are too inaccurate to be considered reliable and used in further calculations.
- ⊗ Often require a construction worker to arrive at the construction site to take measurements and read sensor data.
- ⊗ These solutions do not provide the full scope of the necessary data, thus creating the need to combine several solutions, which, in turn, significantly complicates the monitoring and analysis process

We believe that a self-sufficient, wireless IoT sensor network is necessary to use for continuous and precise long-term, cloud-hosted data management and concrete monitoring in real time as it cures and dries.

KEY SOLUTION COMPONENTS



SENSORS



WIRELESS COMMUNICATION



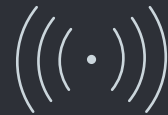
MOBILE OR PC APP



LTE COMMUNICATION WITH SERVERS



ONE GATEWAY FOR 256 SENSOR SYSTEM



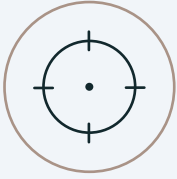
WIRELESS COMMUNICATION BASED DATA ACQUISITION

HOW DOES OUR SYSTEM WORK?

- 01 Sensors (temperature, moisture, deformation) without drilling are embedded into fresh concrete.
- 02 Data from these sensors are gathered in a data logger.
- 03 And sent to the mobile and desktop app via gateway and server for further analysis.



CORE BENEFITS



High measurements precision



Not necessary to wait on lab results



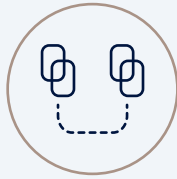
Data on go



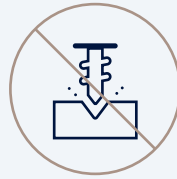
Easy installation



Complete data management in real-time on the concrete as it cures and dries



Data acquisition and measurements from in-situ concrete



Non-destructive method, drilling holes is not necessary



The office monitor several different construction sites in real-time, being aware of any immediate deviations

ABOUT EDI

EDI was founded in 1960 and is a highest rated institute in Latvia in the field of engineering and technologies, conducting fundamental and applied research in:

- ✓ Smart Health
- ✓ Smart Production
- ✓ Smart Mobility
- ✓ Smart Digital life
- ✓ Smart Space

Its main research areas lie in creation of systems for integrated signal and data acquisition, processing and transferring (methods, equipment and software).

EDI has ~100 researchers working on innovative technologies in electronics and computer science.

WHY EDI?

- ✓ Research and innovation,
- ✓ Scientific excellence,
- ✓ Cutting edge technologies,
- ✓ State-of-the-art infrastructure,
- ✓ New minds and experienced researchers,
- ✓ Development, integration and testing of Smart Embedded Cooperative systems

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