ORMAZABAL
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CIT: Research and Technology Center

UDEX. DEMONSTRATION & EXPERIMENTATION UNIT

Reliable innovation. Personal solutions.

CA-452-EN-1311

www.ormazabal.com

PREFACE

From the time **Ormazabal** was founded in 1967, we have been aware of the strategic importance of research applied to our own technological development, and in this way offer quality products and services to our customers and consolidate our leading position in the world's technology sector. The **Research and Technology Center (CIT)** represents an important leap in the company's track record; a project that has long been desired and aspires to become a technical reference at an international level, in the field of electrical power distribution networks.

The Research and Technology Center becomes an essential element in Ormazabal's R&D, with the purpose of acquiring and improving existing technologies and researching new ones.

The CIT's facilities offer their services to the technological scientific sector for performing research testing and for developing and type testing products for **Ormazabal**'s own business units and for the rest of the electrical sector.

The **CIT** is mainly composed of:

» **HPL**: High power laboratory
» **UDEX**: Real-time network experimentation unit

SINGULARITY

» **Unique Experimentation Network** able to be energized by a High Power source.
» **Safe and controlled environment:** 3,500 m^2 real-time experimentation network with over 15 km of underground cable and 450 m of overhead line.
» **Vanguard concept:** configurable autonomous MV network, independent from the grid and different power frequencies.
» **Innovation:** interactive technological platform for developing products and services.
» **Commitment to society and environment:** Enhance our capabilities to provide complete solutions, predicting future needs.

DEMONSTRATION & EXPERIMENTATION UNIT (UDEX)

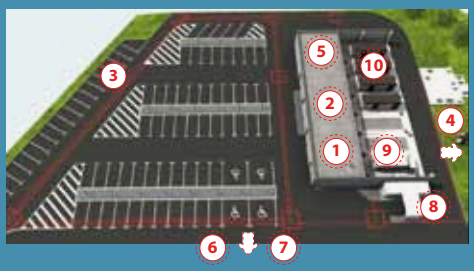
UDEX's concept consists of a highly configurable medium voltage network independent from the grid which allows the development and testing of new technologies, products & services in a safe and controlled environment, positioning Ormazabal at the high-end of world-class R&D capabilities.

Applications

» Electrical protections and network automation.
» Network diagnostic systems.
» Power Line Communications (PLC).
» AMI (Advanced Metering Infrastructures)
» Active demand management.
» Integration of distributed and renewable generation in the grid.
» Bidirectional power flow.
» Dynamic configuration of the distribution network.
» Electric vehicle integration in the distribution network.
» Integration of energy storage systems.
» Power electronics.
» Power quality and efficiency.
» Impact on the safety (EMF, step and touch voltages, short circuit behaviour of real networks, noise,...).

FACILITIES

1. Test bay
2. Control, measuring and comms center
3. Underground cable galleries
4. Overhead line
5. MV grid connection
6. PV roof plant
7. Wind turbine
8. Blve Ring Station: EV Charging station
9. Energy storage substation
10. UDEX substations



CAPABILITIES

» Controlled variable network voltage up to 36 kV
» Flexibility in connections between substations and neutral configurations
» Short-circuit current: up to 21 kA for 3 s
» Nominal current: up to 630 A
» Capacitive and inductive compensation
» Remote monitoring and operation
» Ready to adapt to future applications
» Prepared for incorporation of distributed generation

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