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Low Bitrate Telemetry and High Bitrate Telemetry Systems
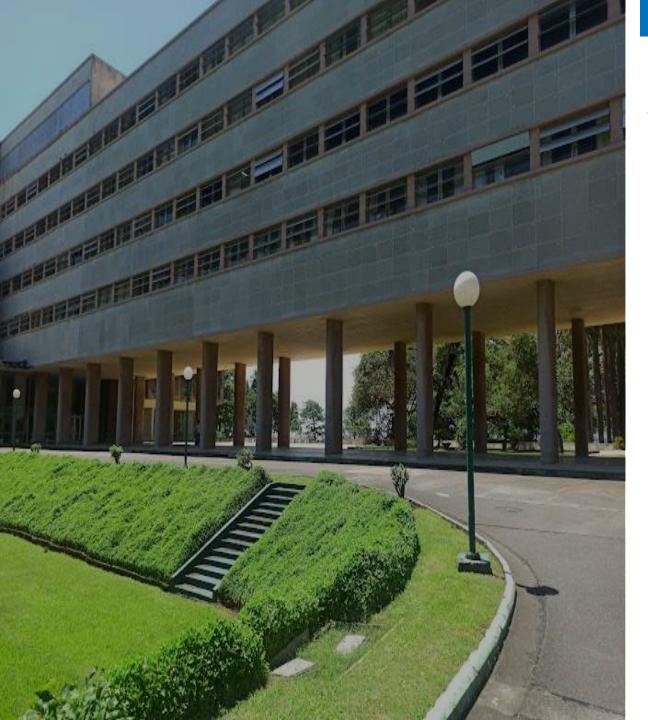## (Research Industry)

Client Background

Client is an Indian Research Institute under the Department of Atomic Energy of the Government of India.

The project entails developing two distinct telemetry systems: Low Bitrate Telemetry (LBT) and High Bitrate Telemetry (HBT). These systems are designed to acquire and save data efficiently, with LBT handling low bitrate data and HBT managing high bitrate data. The systems utilize communication between PCs and NI hardware, featuring comprehensive software for data acquisition, processing, and display.
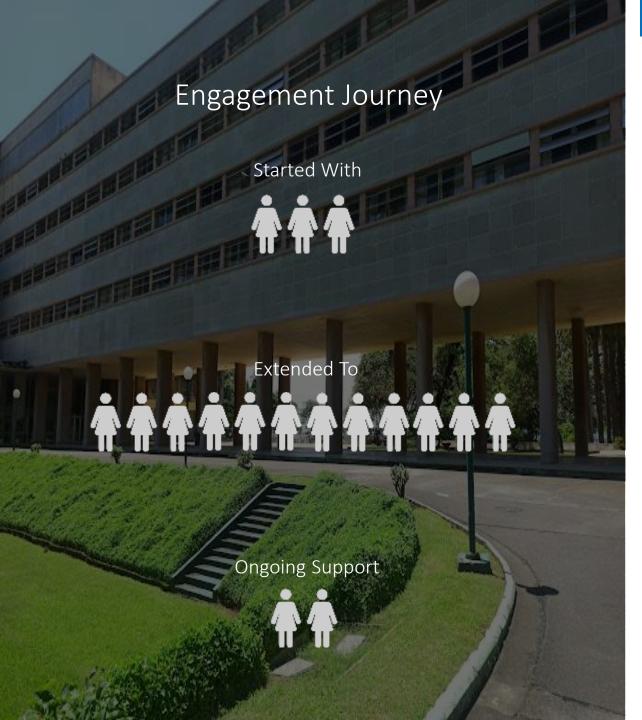
Challenge

The primary challenge was to develop two telemetry systems capable of handling different data rates while ensuring accurate data acquisition and storage. The systems needed to be user-friendly, allowing for easy installation, configuration, and operation. Additionally, they required robust software that could manage complex data processing tasks and display results clearly and efficiently.

Engagement Journey

Started With

Extended To
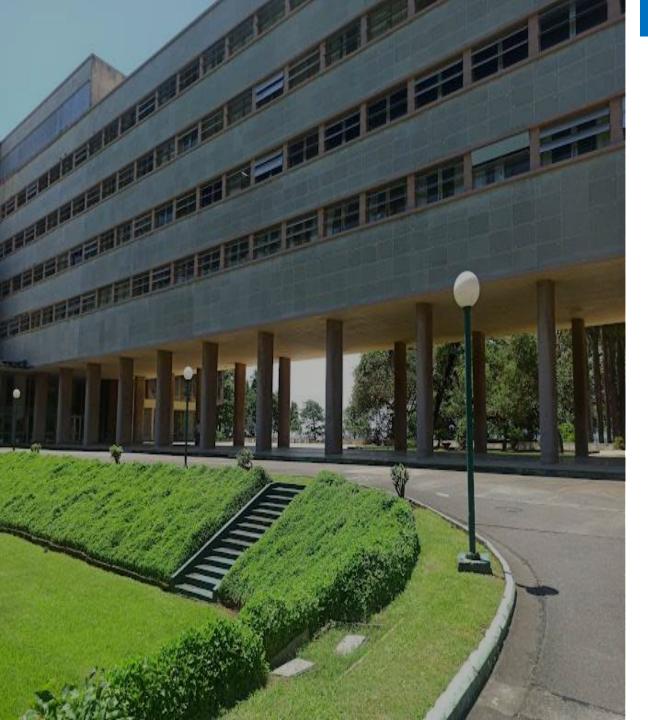

Ongoing Support

Solution

Low Bitrate Telemetry (LBT): The LBT system features standalone application software that interfaces with NI hardware to acquire and save low bitrate data. Installation is straightforward, requiring users to run a setup file. The software includes a user-friendly interface for configuring parameters, transmitting data commands, and viewing data in graphical form. Key functionalities include offset value entry and bad pixel detection, ensuring comprehensive data management.

High Bitrate Telemetry (HBT): The HBT system is designed to handle high bitrate data acquisition with an equally intuitive software interface. Users can easily install the software by running an executable file. The HBT software offers various controls and indicators, such as file naming, frame management, and bit value display. Advanced features include histogram displays, cumulative logic analysis, and isolated event detection, providing detailed insights into the acquired data.
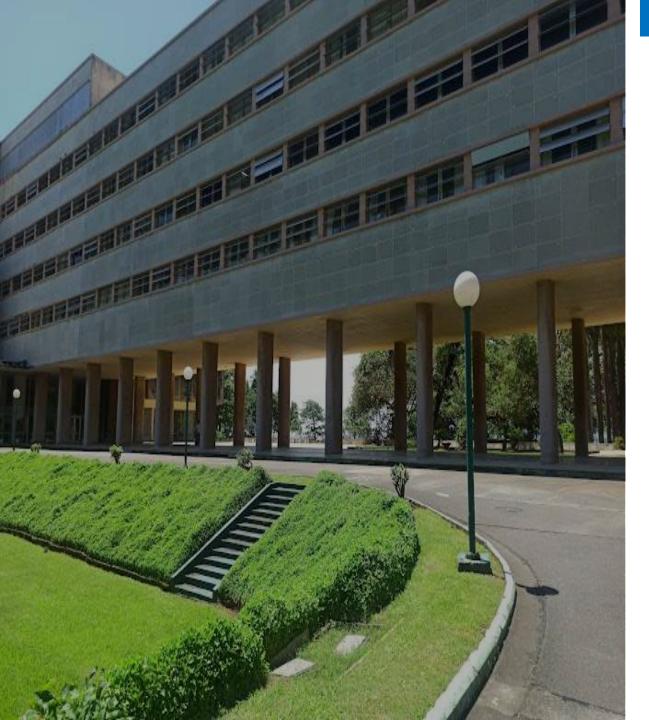
Solution

Shared Features: Both systems support easy communication between PCs and NI hardware. They offer a mix of manual and automated controls for data acquisition, ensuring flexibility and precision. Additionally, both systems provide options for saving data, viewing data in different graphical formats, and performing detailed data analysis, making them versatile tools for telemetry applications.
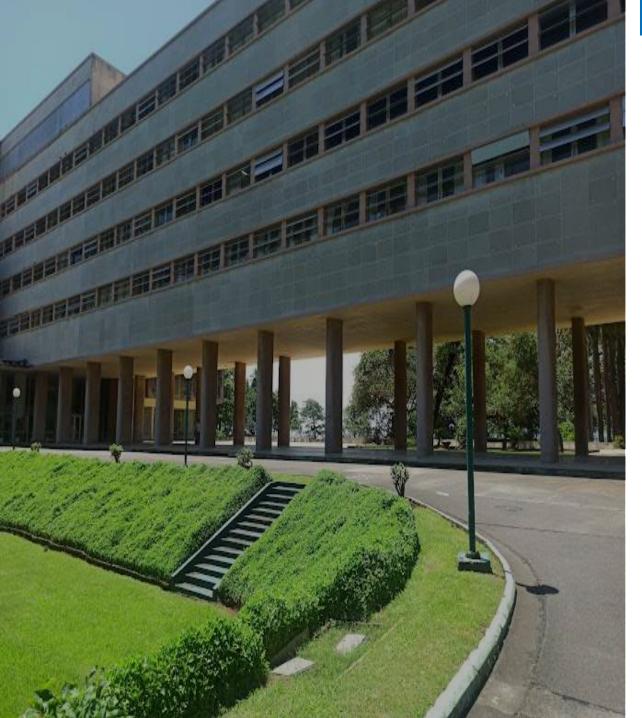
Benefits

1. Efficiency: Both telemetry systems streamline the data acquisition process, reducing the time and effort required for data collection and analysis.

2. User-Friendly Interface: The intuitive software interfaces allow users to easily configure, monitor, and analyse data, enhancing usability and productivity.

3. Accurate Data Handling: The systems ensure precise data acquisition and processing, providing reliable results for further analysis.
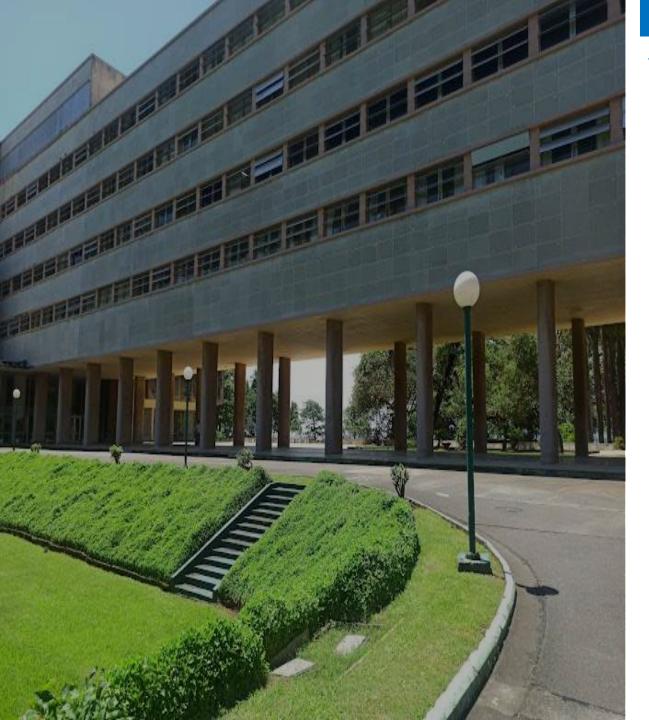
Benefits against alternatives

1. Customization: The LBT and HBT systems are tailored to specific data rates, offering more precise and efficient data management compared to generic telemetry systems.

2. Comprehensive Features: The software includes advanced features such as offset value entry, data command transmission, and detailed graphical displays, providing users with a complete data acquisition solution.

3. Ease of Installation: The straightforward installation process ensures that the systems can be quickly deployed and used, minimizing downtime and maximizing efficiency.

Value Proposition

The LBT and HBT telemetry systems provide a robust solution for data acquisition and analysis, tailored to handle different data rates effectively. With user-friendly interfaces, comprehensive features, and accurate data handling, these systems offer unparalleled efficiency and reliability. By streamlining the data acquisition process and providing detailed insights, the LBT and HBT systems empower users to make informed decisions based on precise and reliable data, enhancing overall productivity and performance.