FLOVEL
Advantage on your side

iNDUS

Digital Intelligence Ecosystem

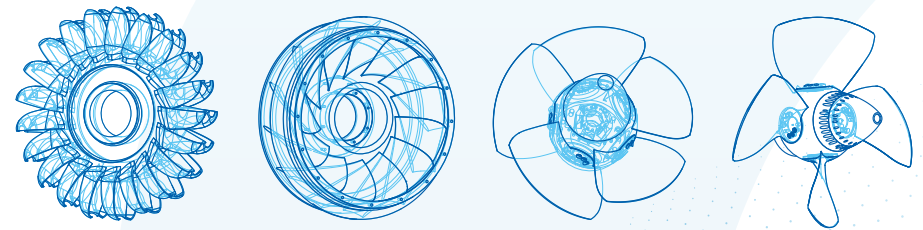## ADVANCE DIGITALIZATION SOLUTION FOR HYDROPOWER PLANTS

iNDUS

AUTOMATION, DIGITISATION, DATA-INTELLIGENCE.

Green Energy and Digital world, are two hot trends and we have fused the two to enable new age Hydropower Plant that require minimal manual intervention. Welcome to the world of iNDUS, our in-house cutting edge solution, that automates the operating processes and uses built in data-based intelligence to maximise performance and minimise risks. It enables digital commissioning, monitoring and management of your Hydropower plants. iNDUS not only automates the plant control and management at the site, but it also enables remote access. It doesn't matter where you are, it is always possible to know the operating parameters of your Hydropower plant in real time through our digital solution which can be accessed from Laptop, Mobile and LSD.

One big advantage of iNDUS over existing solutions is that it is not an adapted solution, instead it has been developed with state of art technology and has been specifically designed for Hydropower plants. Adapted systems are bulky and making them work for Hydropower plants is a challenge. The installation of new patches/software and recommissioning of the system are time consuming and laden with issues. Often new versions do not support the old hardware.

Overall, they underperform and require continuous monitoring to prevent failure. A dedicated SCADA experts team may be required for the purpose. None of the above issues are found with iNDUS which is built in house. Tailor made for the Hydropower plants, it is designed keeping in mind the needs of the Hydropower plants and is easy to operate and service. It offers a complete Digital Intelligence Ecosystem that pushes up the performance and puts the plant in your pocket.

ARCHITECTURE OF SYSTEM

Different Devices

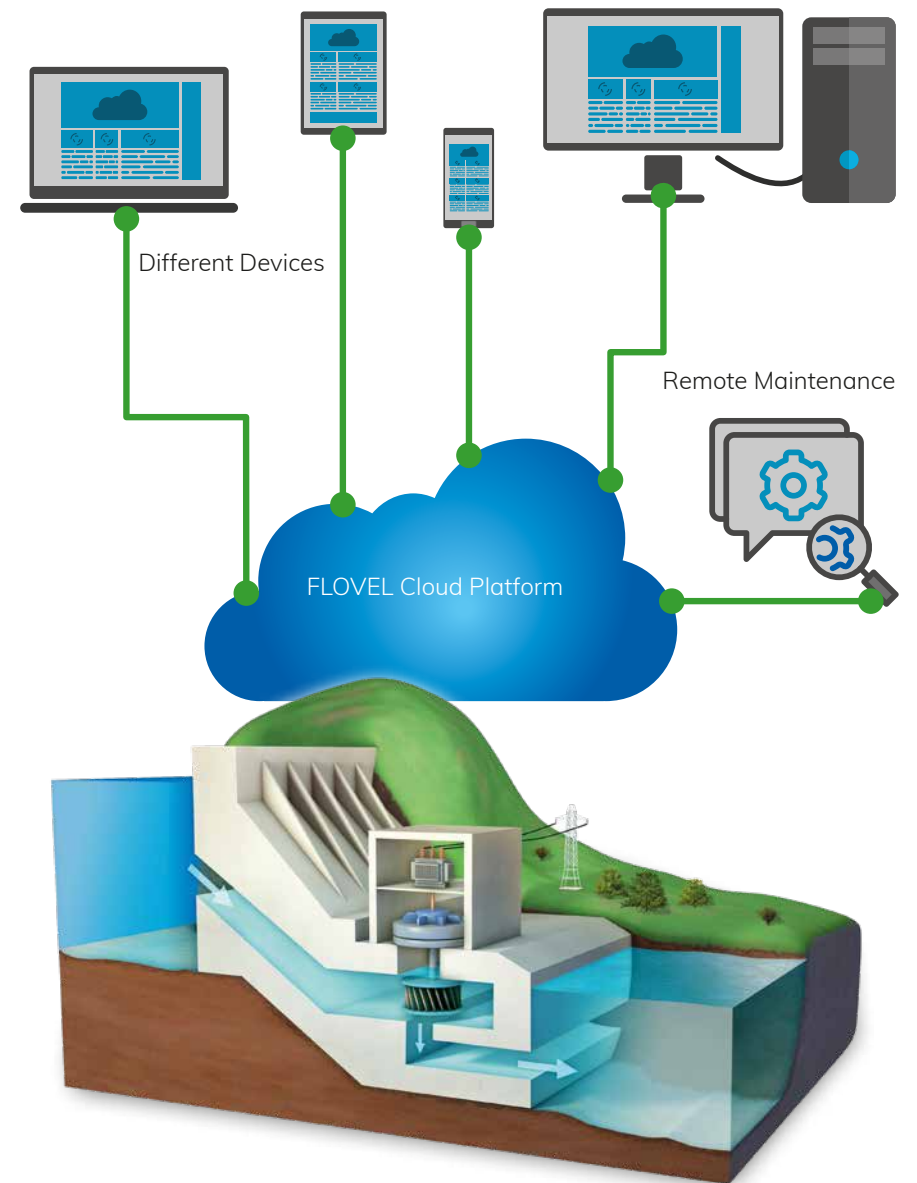Remote Maintenance

FLOVEL Cloud Platform

Key features of iNDUS:
1. Digital Turbine Governor
2. Plant Level Software Interface for Control & Monitoring
3. Real-time Remote Monitoring (Mobile / Laptop / LSD)
4. Alarms Management, Push Notifications, Email Reporting
5. Gateway for Load Dispatch Center Communication
6. Real-time & Historical Data Storage, Integrated Data Security
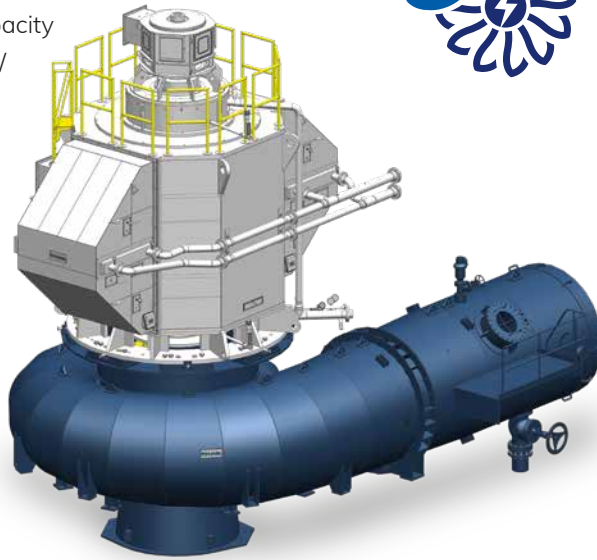7. Report Management

Key advantages of iNDUS:
1. **Versatility:** Solution for all type of turbines & capacity. Can be deployed for new and existing plants.
2. **Flexibility:** Has multiple plug and play functionality and features.
3. **Easy:** User friendly Interface. Easy to maintain, operate and deploy.
4. **Cost Effective Solution:** The system is made specially for Hydropower plants thus making it easy to operate and service. No need to have experts of SCADA system.
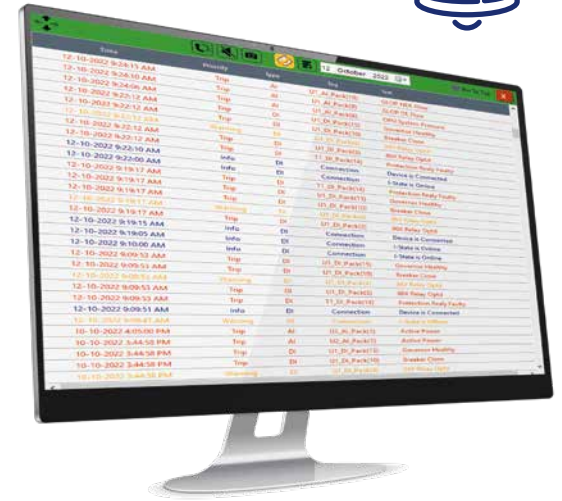5. **Secure:** The system is designed with highly integrated security for data protection & safety.

TURBINE **GOVERNOR**

» All type of Turbines / Capacity
» Speed / Position / Power /
   Level / Island Regulation
» Auxiliary Controls
» Easy Integration

ALARM & HISTORIAN

» Alarm Management
» Historical Data Storage
» User friendly Interface
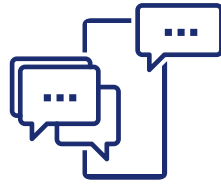   for Data Accessibility

USER **INTERFACE**

» Plant Level Control / Supervision
» Operator / Engineering Level Access
» Complete view with CCTV integration

REPORTING

» User Defined Report Formats
» Auto Generation & Storage for Excel Reports
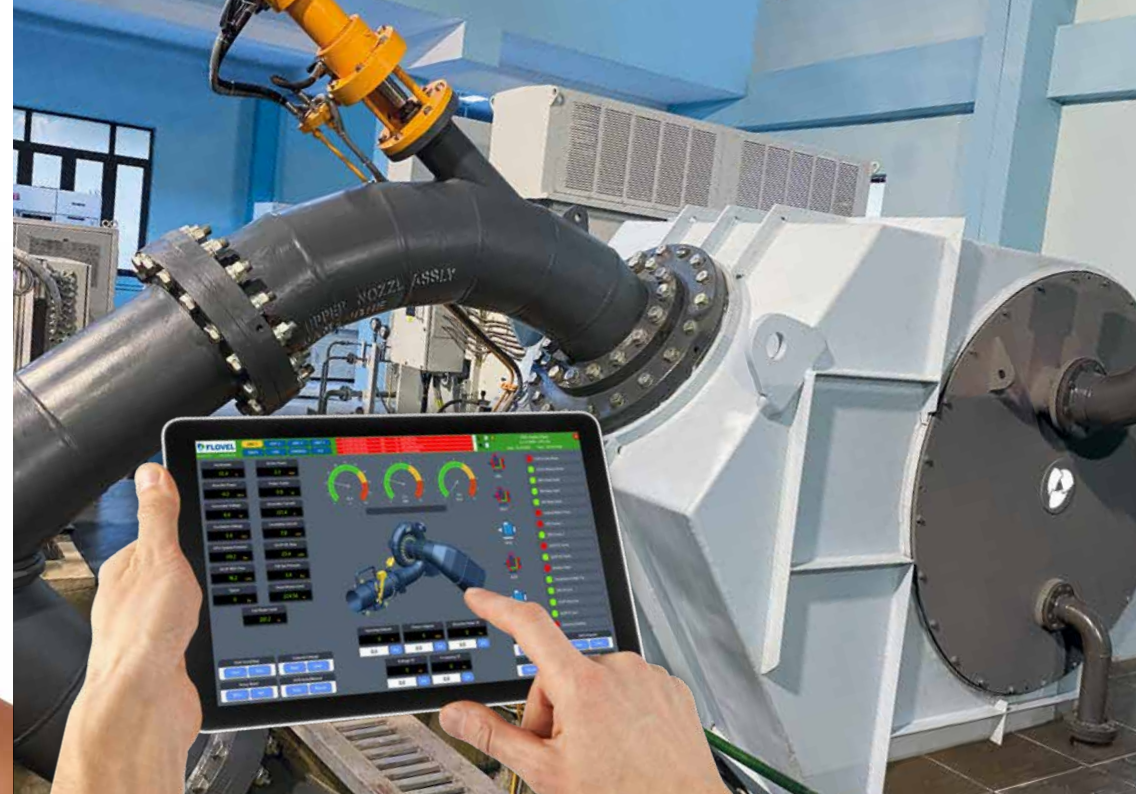» Ease Access for Stored Reported
» Email Reporting

NOTIFICATIONS

» Message Notifications on Events
» Send User Defined Information
  with Messages
» Keep User Update on Site Events

REMOTE **MONITORING**

» Real-time Remote Monitoring
» Supported for Mobiles /
  Laptops / Tablets / LSD
» Provide Information of Plant
» Web based application
  integrated on cloud
» Compatible for
  IOS / Android / Windows

MACHINE **LEARNING**

Machine learning is part of artificial intelligence (AI). The focus is on training computers to learn from data, experiences and the behaviour of the machines in order to improve. The processes improve with use and become more accurate the more data is available. You can use it to find patterns, predict outputs, make important decisions, and react faster if problems should occur.

iNDUS will analysis the operation pattern with different conditions including water levels, ambient temperature, loading, auxiliary conditioning. Based on the analysis results, it will predict the operation condition and give alerts in case any abnormality is observed.

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