

PQSynergy
2010

Crenatus Inc.

Energy & Environmental Data Collection and Reporting System (EDCRS) with Sensors Nodes and Communication Devices Powered by Solar Energy

For the Presentation at PQ Synergy 2010
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Mission

to collect | communicate | report

Energy + Environmental Intelligence (E+EI)

data for energy management and environmental risks sensing
to enable predictive response.



Energy & **E**nvironmental
Data
Collection & **C**ommunication
Reporting
Systems

About EDCRS

- **EDCRS** is an energy management / Environmental data monitoring, communicating, and reporting systems with solar photovoltaic (PV) power supply and maintenance free battery backup.
- **EDCRS** is jointly developed by Crenatus Inc. in USA and Morningstar System Limited in Hong Kong and China to accommodate the increasing demands for environmental stewardship and Smart Grid integrations.
- **EDCRS** offers comprehensive Energy Management & Environmental Intelligence solutions by collecting and transmitting observed **E+EI** data from multiple locations to a central data center.

Technical Advantages

- Algorithm coding for SMS (@160 characters) data transmission. Mobile data via voice phone networks.
- Connects remote terminal units (RTU) via RS-232 or RS-485 interface and supports multiple data centers.
- Data Communication Module is Twitter compatible (@140 characters) Mobile data via HTTP networks.
- Powered by solar photovoltaic (PV) / grid power.
- Build-in 3-Tier XML base architecture.
- Object oriented reports formatting tools in BI-Desktop's E+EI Module.
- BI-Desktop's E+EI Module is Database Management Systems independent.

Marketing Opportunities

- Environmental monitoring functions have evolved from simply tabulating logged data from single location to pulling real-time* data from remote nodes simultaneously across multiple locations, and managing these functions from a central data center via a Smart Grid.
- Increasingly stringent environmental regulations require continuous monitoring on locations with high pollutant discharge risks.

*Remarks: Actual performance may vary due to various networks configurations.

Marketing Opportunities

- Yet another challenge stems from analyzing data itself. Beside those companies require to comply with environmental protection regulations, other organizations, such as utility companies, environmental protection agencies also need a comprehensive **E+EI** solutions, to ensure the reliable and scalable data monitoring, reporting, and warning systems.

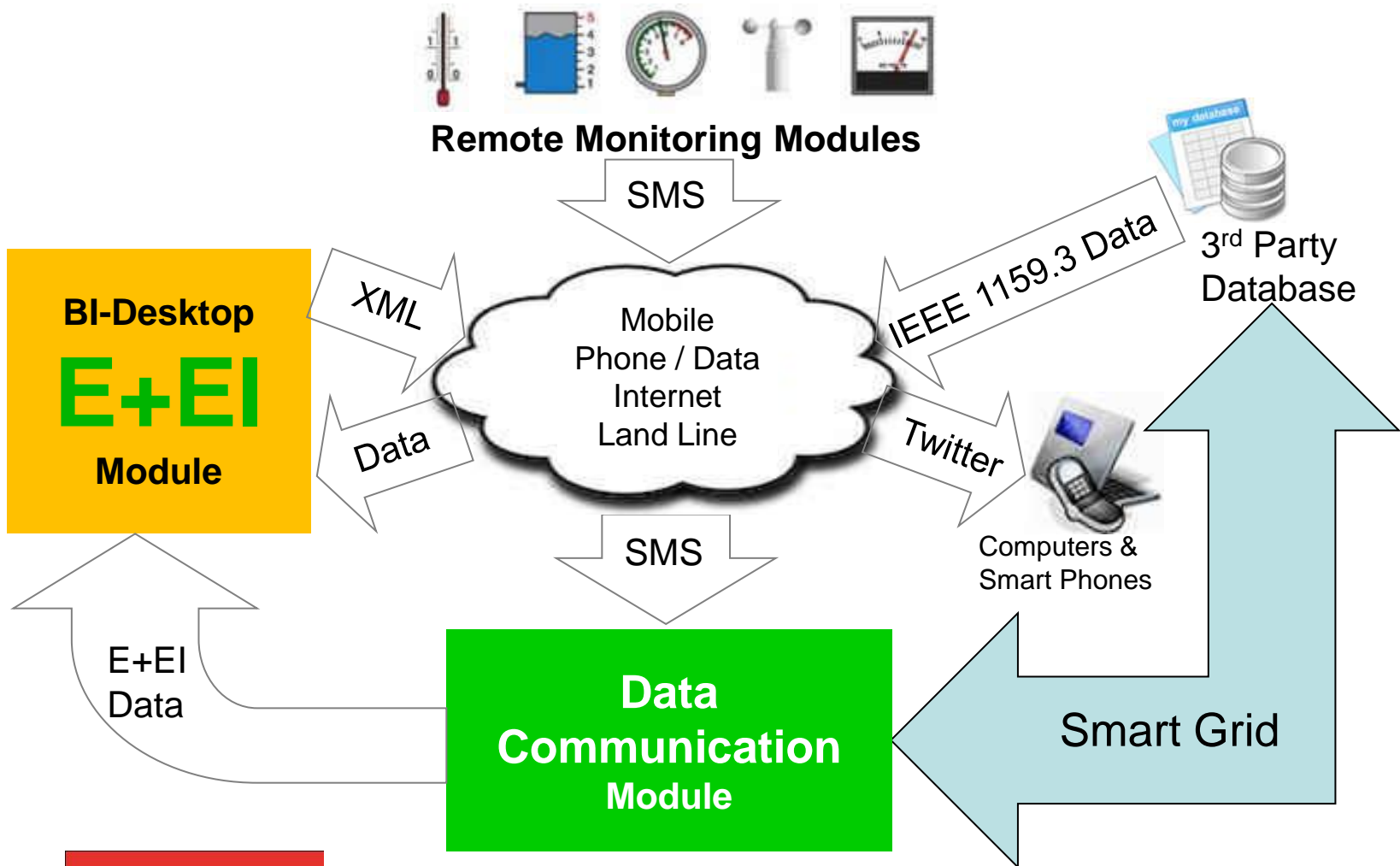
Financial Opportunities

- Environmental data collection in field is becoming more expensive given the necessity of the field workers' on-site presence.
- The implementation of **EDCRS** enables remote collection of data in real-time, allowing more diverse uses for the data analysis. Such systems can be easily utilized by multiple users, regardless of their locations.
- By installing **EDCRS**, companies reduce their environmental regulations complying costs.
- Create added value to a Smart Grid.
- As **EDCRS** can be solar-powered and utilized existing wireless communication technology / networks, the initial setting up cost is lower.

Operational Advantages

- Compressed data to improve transmission efficiency.
- Data is codified into SMS messages and transmit to a central database via existing mobile phone / data networks and land line embedded in the Smart Grid communication layer.
- Data received at the data center is warehoused and ready for analysis and reporting.
- Data warehouse data can be compiled into required reports / dash boards using BI-Desktop's **E+EI** Module.
- Publish to BI-Desktop's Web Reporting Server and is ready for on-line viewing and tweeting.
- Sensing the trend on power usage and environmental data changes to issue early warning.
- Predictive response could be done with BI-Desktop's Analytic Tools.

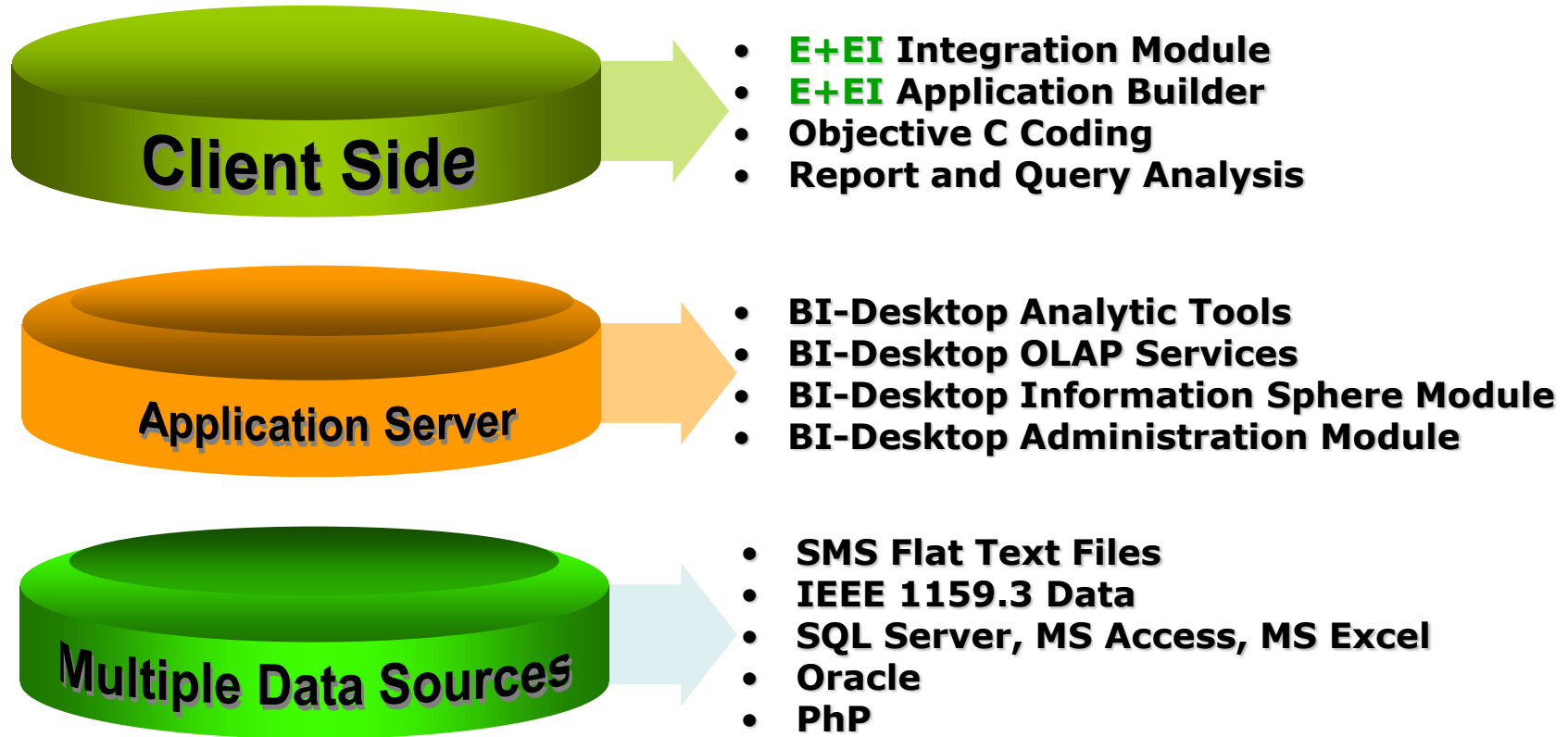
EDCRS System Architecture



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BI-Desktop's **E+EI** Module

3-Tier XML Base Architecture



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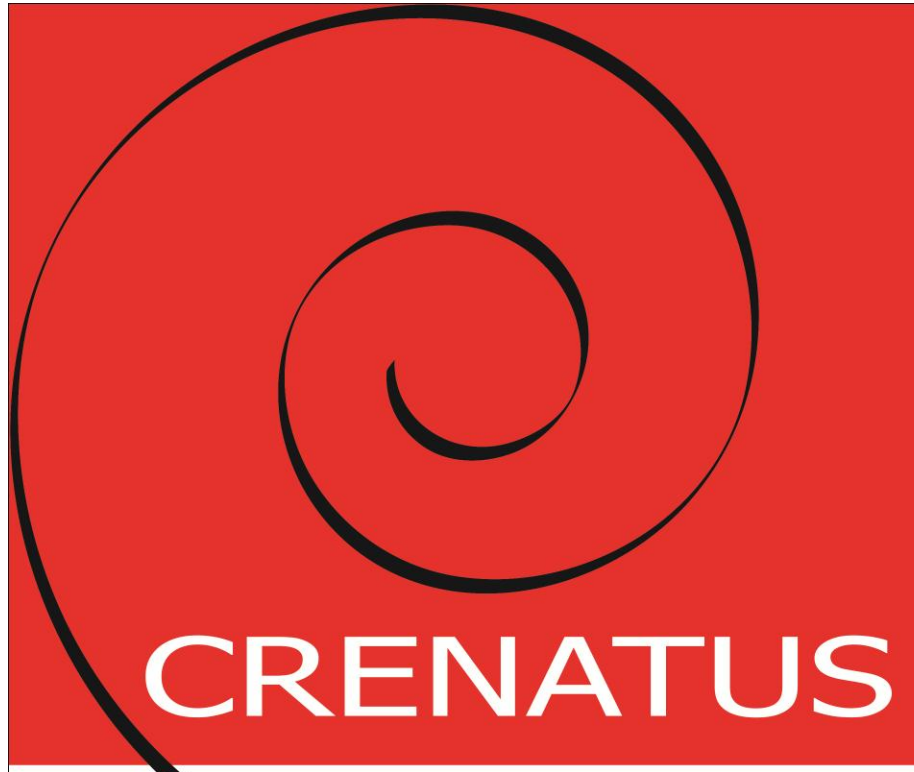
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Thank You

