

Case Study: Automatic Meter Reading Using PSTN/GSM

Provider Name : KALKI Communication Technologies (P) Ltd.
Client Name : Fortune 100 Multi-national Utility OEM
Project Title : Automatic Meter Reading Solution Using PSTN/GSM

The Problem

The client required to develop Automatic Meter Reading System (AMR) based on their SCADA and Meters using PSTN/GSM communication Interface between their Master Control Station and Utility Tariff Meters. The AMR Solution required supporting multiple hierarchical meter data aggregation across the hierarchy.

The Solution

The Solution developed utilized the following resources:

1. OEM's SCADA
2. ODBC Support on the SCADA
3. DDE Support on the SCADA
4. OEM's Meter Reading Software
5. Siemens M20T/T35 GSM Modem
6. US Robotics PSTN Modem
7. Meter Data Aggregation Software

The Solution was designed, that supported a 3 level data aggregation hierarchy, tier-1 meter reading capability over PSTN/GSM, tier-2 level data aggregation and assimilation of a sub-set of tier-1 system and a tier-3 data aggregation of tier-2 system, that provided required information to the Billing System and a region wise distribution schema.

The tier-1 system used PSTN/GSM communication networks, to acquire remote meter data to the tier-1 data aggregation node. This tier-1 system provided local reporting and monitoring capabilities in addition to data aggregation of the tier-1 meters. The tier-2 system used a TCP/IP based network over PSTN/GSM for data aggregation and reporting from tier-1 systems. The tier-3 system also used a TCP/IP based communication over leased line network for data aggregation and reporting.

The tier-2 system and tier-3 system had local database for data aggregation and supports data export over ODBC and DDE.

Tools Used:

- Microsoft C Compiler
- SCADA Communication Interface API
- SCADA Programming Module