The DLMS **Generic Companion Profiles (GCPs)** are the next level development in smart metering compatibility, designed to streamline operations and ensure seamless integration across devices and systems. Published as a public resource, the GCP is readily accessible to all industry stakeholders, providing a standard template for implementing **DLMS/COSEM** functionalities across energy devices and head-end systems (HES). By adopting the DLMS ACESM GCP, organizations can enhance efficiency and reliability in their smart metering solutions.

ACESM (AC Electricity Smart Meter) GCP Overview

The **ACESM GCP** is a specialized profile designed to meet the stringent requirements of the electricity smart meter market. It encompasses 21 essential use cases, ensuring devices meet the minimum functional expectations of this market while allowing for future expansion. The profile serves as a standardized guideline, enabling the seamless communication between devices from different manufacturers, thus promoting a globally interoperable and compatible metering ecosystem.

Addressing Industry Challenges with ACESM GCP

The electricity metering industry faces challenges due to varying market requirements and regulatory constraints. Crafting custom specifications for each market often leads to complexity, increased costs, and extended time-to-market. **ACESM GCP** streamlines this process by providing a **standardized, off-the-shelf solution** that alleviates the complexities of creating bespoke meter specifications.

KEY BENEFITS

Interoperability Assurance: ACESM GCP guarantees compatibility within the smart metering ecosystem. It enables the exchangeability of devices from different manufacturers, simplifying utilities supply chain. It is communication technology-agnostic, supporting all communication technologies (wired/wireless, PLC, mobile, public/private) to offer unparalleled flexibility.

Multi-Market Versatility: The ACESM GCP transcends single-country or DSO-specific applications. Developed to meet the needs of multiple markets, it retains the flexibility to extend its definitions to accommodate diverse use cases. This adaptability ensures seamless integration across different geographical and regulatory landscapes.

Certified Level of Interoperability: Through DLMS UA's rigorous certification process, devices implementing the ACESM GCP are validated for compatibility, ensuring reliability and reducing the need for expensive, bespoke certification platforms.

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Highlighting the Main Use Cases

1	**Meter registration**	Process of incorporating devices (ACESMs, submeters, ...) into the system
2	**Remote Tariff Programming**	Process of remotely programming the parameters necessary to support a time of use (TOU) based tariff contract
3	**On Demand Meter Register reading for multi-utility meters**	Process of collecting meter register readings upon a specific request
4	**On Demand Meter Load Profile reading for multi-utility meters**	Process of collecting load profile register readings upon a specific request
5	**Periodic Meter reading for multi-utility meters**	Process of periodically collecting meter readings for billing purposes (periodic reading)
6	**Remote or local Disconnection and Reconnection (E, G)**	Process of disconnecting or reconnecting the electricity I or gas (G) supply of a customer
7	**Clock Synchronization**	Process of adjusting the internal clock of the metering equipment
8	**Quality of Supply**	Process of supervising Power Outages, Sags and Swells
9	**Load Management by relay (E only)**	Process of controlling specific local loads by means of relays
10	**Firmware update**	Process of downloading new firmware to a device
11	**Meter supervision**	Process of supervising any events which could comprise the meter and the system
12	**Consumer Information**	Process of periodically transmitting meter reads and consumer information via a local digital interface
13	**Communication Supervision**	Process of supervising events affecting the meter to HES communication
14	**Enabling / disabling functionalities**	Process of enabling or disabling a functionality
15	**Power control**	Process of activating or deactivating the demanded power control mode in meters
16	**Alarm and event Management**	Process of management of events and equipment alarms
17	**Meter Availability Control**	Process to ping a meter to check that communication works
18	**Display messages on meter display**	Process of displaying pre-defined or on-the-fly messages such as supply of energy or tariffs
19	**Configuration of meter locally**	Process of initial installation or in-service control
20	**Manage security settings**	Process of setting and updating security credential scan be done locally or remotely and cover setting new security keys or certificates in the meter
21	**Prepayment**	Process for prepayment functions of the electricity meter