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. The GCP's are available to all DLMS UA members and licensable to non-DLMS UA members, making them accessible to all industry stakeholders. They provide a standard template for implementing **DLMS/ COSEM** functionalities across energy devices and head-end systems (HES). Adoption of the DLMS ACESM GCP establishes a consistent foundation for smart metering solutions, enhancing efficiency and reliability while enabling regional extensions such as the North America (NA) Annex.

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, currently supporting GSM, 3/4G, Ethernet, G3-PLC, Wi-SUN, LPWAN and will evolve to integrate additional technologies in the future offering unparalleled flexibility.

Multi-Market Versatility: The ACESM GCP transcends single-country or DSO-specific applications. The NA Annex outlines specific use cases for the North American market, illustrating the GCP's flexibility to extend definitions and adapt to diverse operational requirements

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.

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 specification, enabling seamless data exchange across manufacturers, thus promoting a global, interoperable and compatible metering ecosystem.

ACESM GCP ED1.0.1 Edition Updates

Edition 1.0.1 introduces enhanced descriptions of the Use Cases (UCs) to improve clarity, consistency, and usability, and is specifically targeting end users such as public utilities, allowing to connect the GCP use cases with the business use cases more straightforwardly. It has not undergone any technical changes.

ACESM GCP ED1.1 Edition Updates

Edition 1.1 includes two corrections:

- **Resolution of an OBIS code conflict between the M-Bus Disconnector Script Table and the Arbitrator Script Table**
- **Correction of MD ToU references in UC05**

Highlighting the Main Use Cases

1. Meter registration
2. Remote Tariff Programming
3. On Demand Meter Register reading for multi-utility meters
4. On Demand Meter Load Profile reading for multi-utility meters
5. Periodic Meter reading for multi-utility meters
6. Remote or local Disconnection and Reconnection (E, G)
7. Clock Synchronization
8. Quality of Supply
9. Load Management by relay (E only)
10. Firmware update
11. Meter supervision
12. Consumer Information
13. Communication Supervision
14. Enabling / disabling functionalities
15. Power control
16. Alarm and event Management
17. Meter Availability Control
18. Display messages on meter display
19. Configuration of meter locally
20. Manage security settings
21. Prepayment

ACESM (AC Electricity Smart Meter) GCP - NA Annex Overview

The North American (NA) Annex applies exclusively to the North American market. It includes updates that either expand upon the existing specifications in the AC Electricity Smart Meter Generic Companion Profile or modify certain behaviors to align with regional requirements.

In addition to the 21 use cases defined in the ACESM GCP, the NA Annex **adds one new use case**, introduces **new objects and events**, and updates existing use cases with additional objects. It also reclassifies certain objects as mandatory or optional to better reflect the specific needs of the North American electricity smart meter market.

Updates

- Ed.1.0.1: The North American Annex (NA Annex) has not undergone any technical changes; however, it has been **updated editorially to align with the new edition of the GCP**, including revised chapter numbering and updated cross-references.
- Ed1.1: includes updates to the OBIS codes in sections A.4.9.1, A.4.9.2 and A.4.9.3.

Regional requirements are organized into 4 sections:

- Section A2 outlines items that are optional in the main ACESM GCP but are mandatory for North America.
- Section A3 covers items that are mandatory in the main ACESM GCP but are considered optional or prohibited in North America.
- Section A4 introduces new requirements specific to North America, which may be either mandatory or optional.
- Section A5 includes additional changes, enhancements, and deviations from the main GCP.

Specific NA Use Case

NA-01 **Measurement algorithms**