

# TECHNICAL REPORT



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**Communication networks and systems for power utility  
automation –  
Part 7-6: Guideline for definition of Basic Application Profiles (BAPs) using  
IEC 61850**





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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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**Communication networks and systems for power utility  
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INTERNATIONAL  
ELECTROTECHNICAL  
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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

### Part 7-6: Guideline for definition of Basic Application Profiles (BAPs) using IEC 61850

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International Standard IEC 61850 has been prepared IEC technical committee 57: Power systems management and associated information exchange.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
57/1986/DTR	57/2034/RVDTR

Full information on the voting for the approval of this Technical Report can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61850 series, published under the general title *Communication networks and systems for power utility automation*, can be found on the IEC website.

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## INTRODUCTION

The IEC 61850 series of standards offers a broad basis for communication networks and systems in power utility automation. Due to its broad coverage of power utility automation applications, it is up to the standard's user (utility, vendor, system integrator, etc.) to pick and choose specific options from the standard in order to meet the requirements of the intended objective. As a consequence, implementations of IEC 61850 represent specific subsets of the standard.

In the context of standards the term “profile” is commonly used to describe a subset of an entity (e.g. standard, model, rules).

Accordingly an IEC 61850 standard profile contains a selection of data models (mandatory elements), applicable communication services and relevant engineering conventions (based on the Substation Configuration Language SCL defined in IEC 61850-6) for an application function of a specific use case in the domain of power utility automation.

Depending on the scope and objective different profile types can be distinguished:

- User profile – defined subset that is valid for a specific user / organization (e.g. utility)
- Product / device profile – implemented subset in a specific vendor product /device
- Domain profile – defined subset for a specific domain and relevant use cases (e.g. monitoring of substation)
- Application / function profile – subset covering a specific application or function (e.g. substation interlocking)

These profile types target the reduction of complexity and facilitation of interoperability for their specific scope and during engineering and device / substation lifetime. In order to achieve both these goals, a properly defined profile and appropriate implementations (processes, tools, products) that support the profile are required.