

TECHNICAL REPORT



**Communication networks and systems for power utility automation –
Part 7-510: Basic communication structure – Hydroelectric power plants, steam
and gas turbines – Modelling concepts and guidelines**





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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.200

ISBN 978-2-8322-1062-2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOR POWER UTILITY AUTOMATION –**
**Part 7-510: Basic communication structure – Hydroelectric power plants,
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FOREWORD

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IEC TR 61850-7-510 has been prepared by IEC technical committee 57: Power systems management and associated information exchange. It is a Technical Report.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Process modelling according to IEC 61850-6:2009, including IEC 61850-6:2009/AMD1:2018.
- b) Examples of application of Reference Designation System together with the process modelling, in particular application of IEC/ISO 81346.
- c) Description of modelling related to Steam- and Gas turbines.
- d) Annexes with examples of application of SCL according to the examples in the Technical Report.

- e) The dynamic exchange of values by using polling, GOOSE, Reporting or Sampled Values is no longer included in the Technical Report.
- f) Updated examples of application of SCL:Process and IED modelling applying the Logical Nodes defined in IEC 61850-7-410:2012, including IEC 61850-7-410:2012/AMD1:2015.

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

DTR	Report on voting
57/2391/DTR	57/2432/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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INTRODUCTION

This Technical Report is connected with IEC 61850-7-410, as well as IEC 61850-7-4:2010, explaining how the control system and other functions in a hydropower, steam or gas turbine plant can use logical nodes and information exchange services within the complete IEC 61850 package to specify the information needed and generated by, and exchanged between functions.

The dynamic exchange of values by using polling, GOOSE, Reporting or Sampled Values is beyond the scope of this document.

This document applies the SCL Process element structure for modelling of the processes.

Examples of application of SCL Code according to the modelling examples in this document are presented in Annex B and Annex C.