

# Technical Guidelines

## for Power Generating Units

### Part 7:

#### Operation and maintenance of power plants for renewable energy

#### Category D3 – Attachment A:

Global Service Protocol (GSP) -  
Attachment A: XML schema documentation

Revision 0

01.01.2014



## **Part 7:**

# **Operation and maintenance of power stations for renewable energy**

## **Category D3 – Attachment A:**

**Global Service Protocol (GSP)**

**Attachment A: XML schema documentation**

**Revision 0**

**01.01.2014**

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## **Attachment A**

### **XML schema documentation**

The focus of the FGW Technical guidelines for energy systems Part 7 (TG7) "Maintenance of renewable energy power plants" lies in the description of the processes and the necessary documents and data. Furthermore, a clear and standardised identification of components, standard description of states and events and classification of malfunctions are required for all participants to enable later evaluation and analysis.

The present Part 7 of the Technical Guidelines (TG7) was compiled jointly by operative management - companies, service providers, manufacturers, research institutes, specialist companies, certification bodies and insurance companies.

The Global Service Protocol (GSP) is aimed at producing a standardised electronic data format to enable communication between different persons and bodies involved in the maintenance of renewable energy systems.

- Part 1:** Determination of Noise Emission Values
- Part 2:** Determination of Power Curves and Standardised Energy Yields
- Part 3:** Determination of Electrical Characteristics of Power Generating Units connected to MV, HV and EHV Grids
- Part 4:** Requirements for Modelling and Validating Simulation Models of Electrical Characteristics of Power Generating Units and Systems (starting from Rev. 3)
- Part 5:** Determination and Application of Reference Yield
- Part 6:** Determination of Wind Potential and Energy Yields
- Part 7:** Operation and maintenance of power plants for renewable energy
- Category A:** Miscellaneous section
- Category B3:** Specialist application notes for monitoring and testing foundations and supporting structures for wind turbines
- Category D2:** State-Event-Cause code
- Category D3:** Global Service Protocol (GSP)
- Part 8:** Certification of the Electrical Characteristics of Power Generating Units and Systems in the Medium-, High- and Highest-voltage Grids
- Part 9:** Electromagnetic Compatibility

**Notes on TG7 Category D3:**

- Existing energy industry standards were combined with experience from the renewable energy sector to produce these guidelines.
- Additional categories in TG7 are in preparation at the time of publication of Category D3 in TG7. References to other as yet unpublished categories are therefore provisional and purely for information.
- This applies in particular in revision 0 of these guidelines to
  - FGW TG 7 Category C Documentation
  - FGW TG 7 Category D1
- Supplementary explanations and recommendations on practical implementation will in future include guidance notes to the GSP for applications.

**Materials available from FGW e.V. on the GSP standard:**

- **Guidelines as a free download (PDF) in German and English**
- **Application package TG 7 Category D3 (available for a token fee)**
  - Guidelines incl. Attachment A (schema documentation) as print version in German
  - XSD diagram file

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## 1 Introduction

An XML Schema, XSD (XML Schema Definition) for short, is recommended by W3C to define structures in XML documents. An XML Schema, in accordance with the "W3C recommendation" of 28 October 2004, describes the structure of an XML document.

- The World Wide Web Consortium (W3C) is an international consortium where the member organisations, a permanently employed team, and the public work together to develop web standards.
- The recommendations for the XML standard are available on the Internet at <http://www.w3.org/TR/xmlschema-0/>
- Further information on the construction of an XML Schema e.g. <http://www.w3schools.com/schema/>

The purpose of an XML Schema is to define a class of XML documents.

- The term "Instance document" or "Instance" for short is also used for documents structured according to the XML Schema, in order to describe a document which corresponds to a certain schema.

The XML Schema as in the following specification describes the permitted structure of the GSP XML files and the GSP data contained within, according to TG7 category D3 guidelines.

One or a number of these XML files can be part of a specified GSP document in accordance with TG7 category D3 section 8 according to the GSP document format.

## 2 XML schema documentation

### 2.1 Elements

<b>Name</b>	GlobalServiceProtocol
<b>XSD Type / XSD Typ</b>	XSD:Element
<b>Beschreibung</b>	Datenschema für das Globale Serviceprotokoll
<b>Description</b>	The Global Service Protocol Data Schema
<b>Anmerkungen</b>	Das im GSP Datenschema beschriebene GSP-Datenformat besteht aus fünf Datenblöcken: GSP version-Info., Daten des relevanten Kraftwerkes, Daten des relevanten Energiesystems, Daten des auszuführenden Arbeitsauftrages sowie Daten zum Arbeitsbericht. Der fünfte Block (Arbeitsbericht) ist optional, weil nur die Ausführung ausgegebener Arbeitsaufträge dokumentiert werden kann. Für die als Hauptklassen beschriebenen Datenblöcke s.a. Abschnitt 4 dieser Richtlinie.
<b>Remarks</b>	The GSP Dataformat specified within the GSP Schema consists of 5 data blocks: GSP version-Info., data on relevant power plant, data on relevant energy system, data on relevant work order, data on relevant work report. The fifth block (work report) is kept optional, since only the execution of issued work orders can be documented. More information on the data blocks described as main classes is given within section 4 of these guidelines.
<b>Inhalt</b>	XML-Schema, welches das GSP Datenformat für die GSP XML-Dateien in einem GSP-Dokument beschreibt.
<b>Content</b>	XML-Schema describing the GSP Dataformat for the GSP XML-Files within a GSP document.
<b>Attributes</b>	
<b>Details</b>	<b>Dokumentation / Documentation</b>
<b>Name</b> gspInfo <b>Typ / Type</b> <a href="#">GSPInfo</a> <b>Ausprägung / Occurrence</b> M	<b>Beschreibung</b> Generelle Informationen zur Version des Globalen Service Protokolls. <b>Documentation</b> General (versioning) information about the Global Service Protocol used.