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# PUBLICLY AVAILABLE SPECIFICATION

## IntelliGrid Methodology for Developing Requirements for Energy Systems

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# IntelliGrid Methodology for Developing Requirements for Energy Systems

## 1. Scope and Objectives

This section describes the scope, purpose and objectives of this specification and the architecture on which it was based.

### 1.1 Scope of the Specification

This Publicly Available Specification (PAS) defines a methodology for power system domain experts to determine and describe their user requirements for automation systems, based on their utility business needs. This methodology was originally developed as part of the IntelliGrid Architecture developed by the Electrical Power Research Institute (EPRI), as a means to implement the "IntelliGrid vision" of the automated, self-healing, and efficient power system of the future.

### 1.2 Overview of the Methodology

#### 1.2.1 Concept of System Engineering

The IntelliGrid methodology is a subset of the science of systems engineering. Systems engineering methodology separates the concepts of "user requirements" from "technical specifications": **user requirements** define "**what**" is needed without reference to any specific designs or technologies, while **technical specifications** define "**how**" to implement the automation systems in order to meet the user requirements.

#### 1.2.2 IntelliGrid System Engineering Methodology

The overall IntelliGrid systems engineering methodology is illustrated in Figure 1 and consists of the following types of people and project steps:

- **Executives or other utility managers review business cases** which describe and justify a perceived business need. They then approve specific projects.
- **Domain experts and project engineers are tasked to develop a project team** to undertake the project. As one of the first undertakings of the project team, all power system experts and other stakeholders (users) that could impact or be impacted by the project should be identified and represented (full time, part time, or as applicable) on the project team.
- **Domain experts review the existing IntelliGrid Use Cases** for applicability and ideas. These Use Cases can be found at http://intelligrid.info/IntelliGrid_Architecture/Use_Cases/IECSA_use_cases_overview.htm
- **Domain experts develop a list of Use Cases** (functional descriptions), covering not only the specific business need but other user needs and future possibilities that could impact or might be impacted by the project.
- **Domain experts,** with possible assistance by project engineers who understand the Use Case process, **draft the key Use Cases**, capturing all of the necessary user requirements.
- **Domain experts review and update these Use Cases** to ensure their needs are captured correctly and to assess possible misunderstandings, overlaps, holes, and other inconsistencies

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