



## Intelligent Self-describing Technical and Environmental Networks

[www.s-ten.eu](http://www.s-ten.eu)

### S-TEN

#### Description of the project

S-TEN's objective is to exploit the "Semantic Web" for scientific and engineering applications, and to provide support for decision makers in a complex and continuously changing environment. This support is based upon the application of rules and process knowledge to measurements, human observations and design information published on the Web. Data acquisition and process control is assisted by self-describing devices, e.g. measurement sensors or intelligent sub-systems, installed in the considered technical systems.

#### Impact

The S-TEN project will allow advanced process monitoring and alarm systems to be applied to continually changing technical and environmental networks, without the need to maintain a network data warehouse. The S-TEN approach will make the network self describing. Each component of the network will publish autonomously information about what it is, where it is, and what it does on the Web. This approach will make network monitoring and control practical, in new applications. These developments will be validated in demonstrators concerned with environmental monitoring using mobile sensors, preventive maintenance of production equipment and control centre technologies for distributed energy resources.

#### Main innovations

The S-TEN project will contribute to international standards by defining standard ontologies for the publication of network information on the Web and defining a methodology for the extraction of ontologies from existing international standards.

Innovations provided by the project will comprise:

- an ontology which enables a device to announce its existence, position in a network, and the services it provides;
- the capturing of human qualitative observations and their publication on the web with respect to a formal ontology;
- the development of rules which can be applied to any kind of technical data available on the web;
- the linking of STEP and OWL - two worlds which have been apart up till now.

## Results so far

Future results will be documented in an updated version of this IST project Fact sheet.

## More details

For more details please refer to the S-TEN website ( [www.s-ten.eu](http://www.s-ten.eu)).

## Upcoming work

The first 12 month will be dedicated to:

- the evaluation of technologies and application requirements,
- building ontologies for intelligent networks and self describing devices including measurements and observations,
- linking with design and maintenance knowledge, e.g. deriving ontologies from STEP data models
- deriving a methodology and ontologies for decision support

## Administrative details

- Project acronym: S-TEN
- Start date: 1st April 2006
- End date: 30th September 2008
- Budget: 1.7 Mio €
- Contract Type: Specific Targeted Research Project

## List of participants

| Participant name  | Country     |
|---|-------------|
| Forschungsgemeinschaft für Elektrische Anlagen und Stromwirtschaft e.V. | Germany     |
| CAESAR Systems Ltd.   | UK          |
| Cygnus Engineering AG   | Switzerland |
| Haute Ecole Valaisanne  | Switzerland |
| Fundación LABEIN  | Spain       |
| UAB LKSoft Baltic   | Lithuania   |
| LKSoftWare GmbH   | Germany     |
| AUCOTEC AG  | Germany     |

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