# ExproBase

ExproBase is a collection of practical knowledge independent of company affiliation and product type for improved safety and reliability of well and subsea technology

## Knowledge Base for Safety and Reliability of Well and Subsea Technology

**Reliability is probably the most important attribute for well and subsea technology from a life cycle profit point of view. Most well and subsea technology components are barrier elements and must also be reliable to maintain safety and integrity. Vendors having the knowledge for making reliable technology have a major competitive advantage. This will also be the case for operators that are able to select reliable technology and taking the necessary steps to get it to work throughout its lifetime.**

**Content**

ExproBase consists of five knowledge modules (figure 1):

- Guidelines
- Databases
- Textbooks
- Templates
- Presentations

The current guidelines describe the project planning and project execution phases prior to the operational phase. Each activity describes what to do, the purpose, deliverables, how to do it, who to involve and decision gates. All guidelines are based on practical experiences.

The other modules are multi-disciplinary support tools for the guidelines. When the failure mode, effect and criticality analysis (FMECA) is performed during the detail design phase, ExproBase provides the FMECA guideline (work process), but also required support tools such as templates, materials database, failure mechanism database, surface treatment database, equipment database (figures 3 and 4), operational conditions database, human factors database, etc. The databases and the textbooks have emphasis on basic descriptions and relations. All documents are short and to the point.

**Use**

ExproBase is not intended to replace in-house governing documents or experts, but may be a supplement for improved understanding of safety and reliability issues amongst practical engineers working with one or more of the following tasks (figure 2):

- Technology procurement
- Technology qualification
- Maintenance
- Well integrity monitoring
- Organization development
- Reliability data analysis
- Failure investigation

Guidelines are not available for all the above work processes, but the users will nevertheless benefit from the multi-discipline support tools.

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Product datasheet

Updated 16th August 2010

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**Figure 1**
ExproBase navigation figure

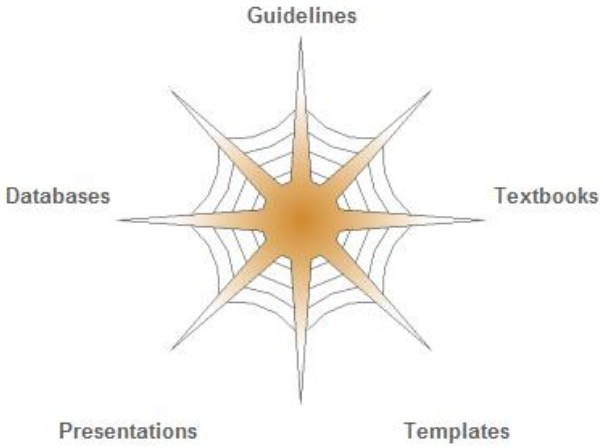


**Figure 2**
ExproBase focus areas

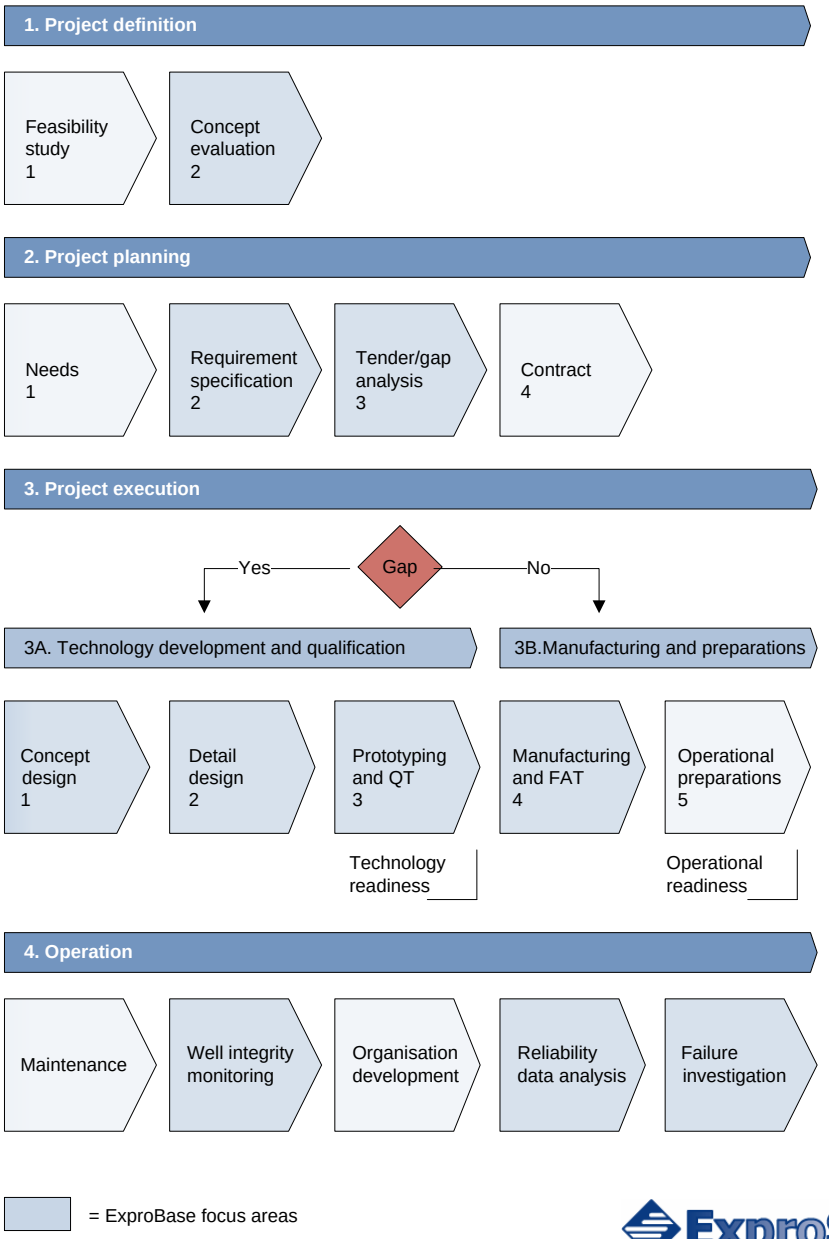


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**Figure 3**
Well equipment navigation figure

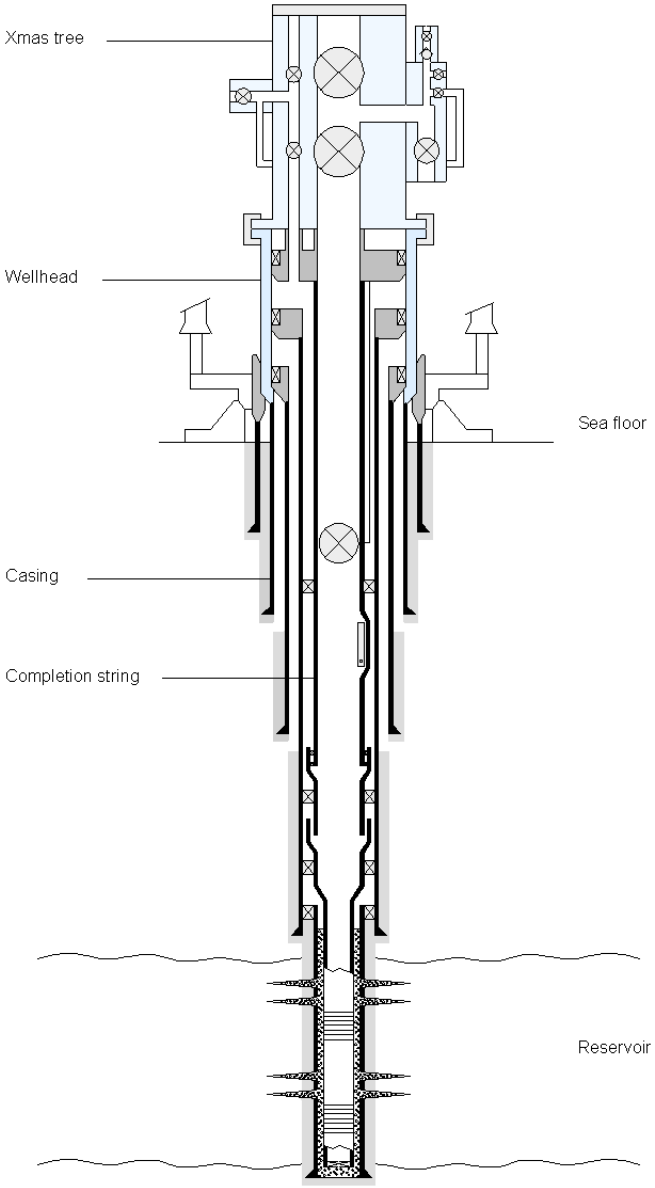
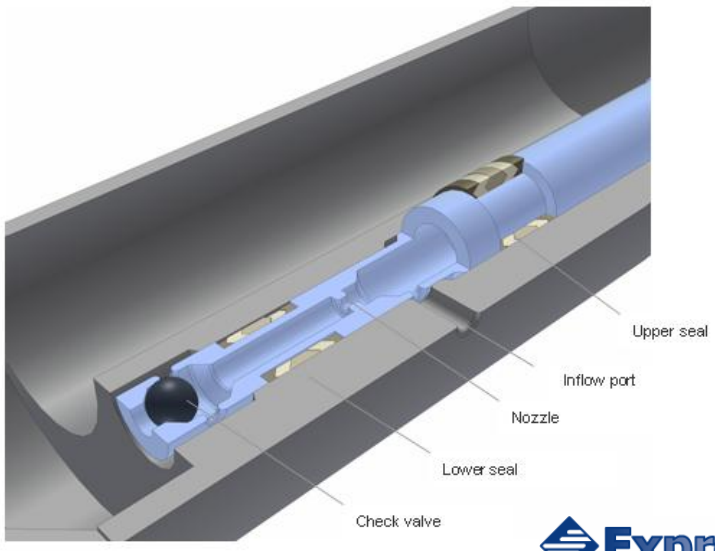



**Figure 4**
Details of the operational gas lift valve (GLV) from the well equipment database

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ExproBase aims to provide practical knowledge related to safety and reliability.

**Use (cont.)**
ExproBase can also be used as a reference for everyday use, such as:

- Dictionary
- Synonym lists
- Abbreviation lists
- Standard overviews
- 'What is' descriptions
- 'How it works' descriptions

Students aiming for the upstream oil and gas industry may benefit from using the practical knowledge in ExproBase during their studies, but also during their first working years as juniors.

**Benefits**
Individuals using ExproBase will improve their learning, problem solving abilities and communication with experts ('ask the right questions'), which are pre-requisites for work efficiency in multi-disciplinary teams. ExproBase will thus be one of several measures for improved safety and reliability, but also efficiency in oil and gas operations.

**Maintenance**
All ExproBase users are welcome to suggest changes by using the feedback function and thus participate in the process of continuously improving the web site. Users with an agreement have access to the edit function for making direct changes to the documents and save these as suggestions. All suggestions will be reviewed and published by the managing editor. ExproBase is a public domain web site and relies on donations or projects for day-to-day maintenance. ExproSoft is aware of the large number of disciplines involved in the effort to make ExproBase and welcome comments and corrections.

**History**
ExproBase has been developed continuously by enthusiasts since 1997 and evolved to become a public domain web site in October 2009. The research organization SINTEF in Norway was an important contributor with multi-disciplinary knowledge during the initial phases of the ExproBase development. The former Hydro Oil &Gas (now part of Statoil) was the main contributor for bringing ExproBase onto a web platform. Statoil has contributed to the development of the guidelines for project planning, project execution and the FMECA.

**ExproSoft**
ExproSoft is a company located in Trondheim, Norway, providing independent services related to safety and reliability of well and subsea technology. ExproSoft is responsible for quality assurance and publishing of ExproBase. ExproSoft also offers consultancy services related to all work process described in ExproBase (figure 2).

**Core team**
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