

Integrity management

Zenator is an asset integrity management system for project completion and commissioning



The Gorgon facilities under construction at the HHI yard in South Korea

Zenator drives Gorgon forward

In the summer of 2010, following the Deepwater Horizon tragedy, one of the major oil and gas operators started a global roll-out of Zenator software, a product developed by Falcon Group.

Since then, the software has been successfully deployed on half a dozen of the company's projects, including the mighty Gorgon project offshore Western Australia and about the same number for Falcon Group's other customers around the world.

Zenator is an asset integrity management system

used by the oil and gas industry for project completion and commissioning.

Falcon Group's President and CEO, Alan Mills, said: "Zenator is an innovative, robust verification tool, focused on achieving safe and timely completions during a project's cycle and ultimately, handover to operations."

"The software is usually implemented during the front end engineering and design (FEED) stage, when it is high on the Influence Curve and soon becomes the central repository for engineering tag

data, enabling users to verify each activity that will ultimately impact safe, timely, handover to operations."

The software is used from tracking and reporting factory acceptance tests (FATs) through phased completion of the check-sheets that mark mechanical completion, pre-commissioning, dynamic commissioning, start-up and performance testing, while also managing all punch-list items (PLs), management of change (MOC), inhibits, isolations and tie-in points.

A wide spread of stakeholders on a typical project deploying Zenator are able to make use of the clarity, transparency and focus it brings.

While Zenator is traditionally "owned" by the commissioning manager, other key stakeholders will be engineering, construction, QA, project controls and of course, operations.

Mills said: "When used to audit the completion of a project at major milestones, to verify the status on the facility and in the database and check these are the same, Zenator

serves as invaluable confidence-builder.

"Savvy customers know this and use Zenator to their best advantage, helping establish trust with regulatory and certifying authorities."

This year and the next will see Zenator being deployed on over \$150 billion of capital projects around the globe, 25 in total, making it the world's leading completions management software.

The full project list includes 14 projects for Chevron, six for Petrofac, and the rest spread among Falcon Group's customers in Europe, Africa, the US and South America.

The vast majority of projects deploying Zenator since 2011 and through 2015 are being constructed in the Asia-Pacific region, concentrated in the three Korean yards of DSME, HHI and SHI.

The list includes Gorgon and six other projects, at various stages of construction, all using Zenator to track, control, manage and report, from granular detail to overall progress.

Gorgon takes shape

The software is being used for the Gorgon project, which is developing the Gorgon and Jansz-Lo gas fields, located within the Greater Gorgon area, between 130-220km off the northwest coast of Western Australia.

It includes the construction of a 15.6 million tonne per annum (MTPA) liquefied natural gas (LNG) plant on Barrow Island and a domestic gas plant with the capacity to supply 300 terajoules of gas per day to Western Australia.

Gorgon LNG will be off-loaded via a 2.1km long loading jetty for transport to international markets. The domestic gas will be piped to the Western Australian mainland.

The Gorgon joint venture is investing approximately \$2 billion in the design and construc-

tion of the world's largest commercial-scale CO₂ injection facility to reduce the project's overall greenhouse gas emissions by between 3.4-4.1 MTPA. The Australian Government has committed \$60 million to the Gorgon Carbon Dioxide Injection Project as part of the Low Emissions Technology Demonstration Fund.

The upstream scope of the project includes drilling eight high-rate, big-bore development wells at the Gorgon field, and 10 at the Jansz-Lo field.

A subsea gas gathering system and subsea pipelines that will deliver gas from the Gorgon and Jansz-Lo fields, located between 65-130km respectively off the west coast of Barrow Island is also being built.

Construction of pipelines that run from the shore crossing on the west coast of Barrow Island across to the east coast, where they tie-in to the gas treatment plant forms part of the project.

A domestic gas pipeline that runs more than 90km from Barrow Island to the Western Australian mainland where it will tie-in to the existing Dampier to Bunbury Natural Gas Pipeline is being built.

Mills said Chevron has chosen the software for Gorgon because: "Zenator focuses on the needs of commissioning and the

ultimate end-user, operations.

"We designed and built Zenator to exactly meet the needs of these key stakeholders. Having around 35 years' experience and worked the first 20 or so in engineering, construction, commissioning and operations, I knew those key stakeholders were being chronically under-served.

"Zenator rectifies that situation and restores balance. From the outset we made Zenator configurable so that companies can easily wrap it around their way of working on a particular project.

"Our customers are mainly operators and contractors in oil & gas, but we also have customers involved in shipbuilding, nuclear new build, nuclear decommissioning and civil infrastructure projects."

From the company's offices in Houston's Energy Corridor, Mills went on to say: "It's no secret. I knew, as our customers do, that if you focus on the way a project is commissioned and completed, with safe and timely handover to operations, you improve business performance and the bottom line.

"In fact, it was assumed exactly this would happen when owners calculated the net present value, several years earlier when the project was sanctioned.

"Using Zenator is all about

a way of working, whether the project is enormous, like Gorgon, or very small, such as modifications to brownfield facilities. So the argument I sometimes hear that a project is too small to use Zenator is not valid.

"It's true, on giga projects like Gorgon, Zenator is populated with over a million records and users rely on it entirely to do their work, so it has to perform well. But we know from the experiences of our corporate customers that used on much smaller projects it brings consistency to the way the company completes its projects and provides essential development of the company's talent.

"I am very proud that our software is being used to develop and train the next generation of commissioning managers."

Falcon Group is not complacent about the success Zenator is receiving.

Mills added: "Our work never stops. There is an exciting development program that will bring further innovation to our customers. We don't dictate how a customer should work, instead we set out to provide new ways of working. There is some streamlining and some radical innovation in the pipeline for our customers." ■

Gorgon sailaway



Jetty construction for the Gorgon project