

# 3CNews



**3C METAL GROUP'S OFFSHORE SAFETY RECORD  
REACHES 1,500,000 MAN-HOURS LTI FREE**

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# A WORD FROM THE MANAGING DIRECTOR

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“It was a year comprised of strengthening our core activities and also a year of diversification.”

As we close on 2016, we reflect on the milestones achieved during what has been a successful but challenging year for 3C Metal Group. It was a year comprised of strengthening our core activities and also a year of diversification, as we pursued new developments in the mining, renewable energy and gas industries.

More than ever, our focus was on providing a fully-integrated and cost-effective service to our clients. We prepared for the current and future challenges facing the industries in which we operate by providing permanent technical support and continuous skills development to our teams. Thanks to the repeated trust and confidence of our clients, our teams were again utilized on a multitude of projects. We never insist enough that the dedication and involvement by all teams within our organization is the key to successful performances executed, most importantly, in a safe manner.

Several of 3C Metal Group's 2016 successes include: 3C Metal France's delivery of the TIGF PSAIRE, RZL Phase 1 and DESHY 54 projects; 3C Metal Middle East's successful undertaking of the installation of a MPD package on the Bolette Dolphin in Ivory Coast, upgrade works on the Ocean Rig Skyros in offshore Angola and preparation works on the Atlantica Delta in Congo; 3C Metal South Africa's involvement in Solar and Biogas projects; 3C Belmet Services' successful completion of GE Channel Partners qualification for the inspection and repair of GE drilling risers; Belmet's delivery of the gantry system and sampling tool for De Beers Marine; and 3C Metal Asia positioning itself as a key player in the Asia Pacific region through many projects and supplies from South East Asia to Australia.

Looking ahead to 2017, it is essential to maintain a clear strategy and direction for our teams and clients. We will continue to provide a quality service with our engineering, supply, prefabrication, logistic and installation services provided by all of the 3C Metal Group entities in France, Dubai, South Africa, Namibia and Malaysia.

3C Metal will further its significant progress in terms of our corporate social responsibility. We will reinforce our commitment to supporting the communities in which we live and work by pursuing new community development initiatives and continuing our engagement with existing ones.

Finally, the main objective for 3C Metal Group in 2017 will be to have a safe year without accidents. The systems are in place, and I count on the dedication to safety and common sense of all our teams to achieve this goal.

On behalf of the 3C Metal team, I would like to wish you and your loved ones all the best for 2017.

**Philippe Boy**  
Managing Director



## DE BEERS MARINE — GANTRY SYSTEM AND SAMPLING TOOL

Having successfully undertaken a variety of work for De Beers Marine in the past, Belmet's Cape Town facility was pleased to secure the complete launch and recovery gantry system as well as sampling tool for the diamond mining company's new vessel, SS Nujoma.



The gantry structure consists of two main legs of 22 tons each and an 86 ton top structure, plus auxiliary items including the cursor frame, the gravity compensation system as well as the maintenance access platforms. Belmet was also awarded the contract to install almost all of the subcontracted equipment for the gantry, including the umbilical and air hose reelers and the COG crane, bringing the total weight of the completed gantry structure to 212 tons.

The 120 ton seabed tool consisted of five drill casing segments of 10 ton each, and an internal product transportation system.

The sheer size of the separate pieces of equipment provided some transport challenges for the team. The gantry legs had to be offloaded from the trucks onto the road 20m before encountering any transmission lines to be skidded on 70mm Teflon pads on the tar before being reloaded onto the truck on the other side. Belmet opted for the modular fabrication approach to minimize time spent on site.

Working with DFM and Apec Civil Engineering, complex design and calculations were undertaken to take into consideration the heavy weight, wind forces, terrain and soil compaction as well as bearing capacity for the concrete bases in order to do the final site assembly, which formed part of Belmet's scope. Civil works commenced in February and consisted of the construction of temporary reinforced concrete foundations, built to support

the weight of the structures.

During May, the first two legs were delivered to site and erected onto the concrete columns. In June, 16 tons of scaffolding were erected to access the top of the legs. From July to September, the top structure, all the walkways, stairs and platforms around the gantry were completed. Extensive commissioning with slide tests were undertaken on the cursor frame across the main rails, the gravity-compensation system and the traveling sheaves.

In September, the gantry structure was placed onto the vessel according to very tight tolerances, where after commissioning and final installation on board commenced. The project was completed during early November.

The project involved in-depth planning and engineering with more than 26,000 man-hours worked on site without any injuries.

3C Metal South Africa and Belmet joined forces to execute the quay-side installation and the vessel installation.

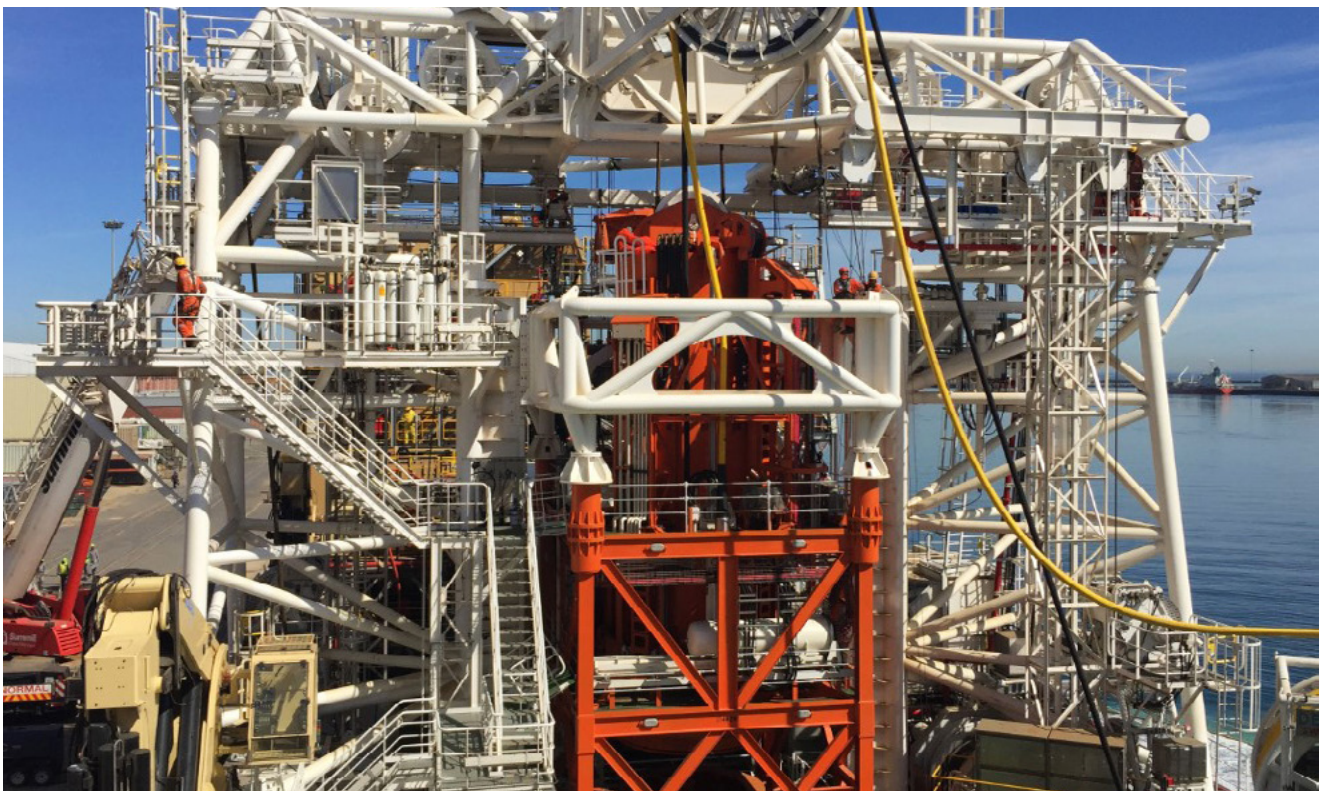






Images from Belmet workshop (L-R/ top-bottom):

- Gantry Leg, overall height in excess of 7m, largest width close to 9m and length close to 15m,
- The Top Structure was also 7m high, 22m long and close to 8m wide,
- The Drill Casing segments had a diameter of 3m and were 3m high,
- The Cursor Frame was approximately 8m wide by 9m long and 3m high once feet assembled.





## TOTAL TLP CONGO — MEP INSTALLATION



After three months of upgrades performed onshore on Atlantica's Mast Equipment Package (MEP), the project continues offshore with the integration of the MEP on the Total Tension Leg Platform (TLP).

In May 2016, the Total TLP (manufactured by Hyundai Heavy Industries, South Korea) reached the Moho Nord Field, offshore Congo. At the time, 3C Metal was working on upgrades on the Atlantica MEP modules onshore in Pointe-Noire to prepare them for their integration on the TLP. Following this successful campaign, where 3C Metal set up a temporary fabrication facility within Total's ILOGS yard from scratch, its team was transferred offshore to assist Atlantica and Total with the installation of the MEP on the TLP and to assist with implementing the operational improvements found during the integration.

Another important part of the scope was to integrate the M-I

SWACO cutting treatment equipment on both the TLP and the Atlantica Delta. The integration of the M-I SWACO system on the TLP was challenging due to the fact that it had to be quickly adaptable with respect to the MEP which is capable of skidding between any of the 27 drilling slots on the TLP deck. This was achieved through an innovative electrical solution by our electrical partner Electrowave.

As the integration continues, 3C Metal still has important scopes to deliver including, the coil tubing and well test integration. With personnel continuously deployed since February 2016, 3C Metal has achieved more than 70,000 man-hours on this project with zero LTIs.



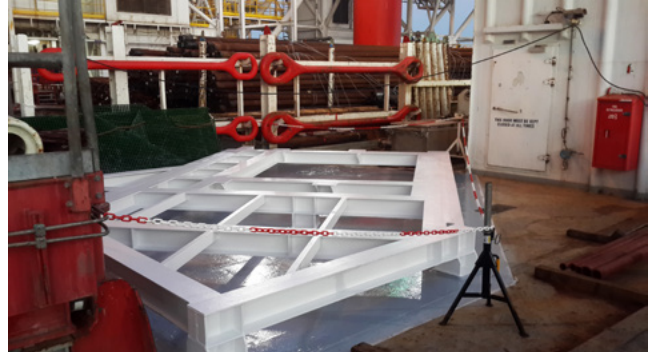
## WEST ECLIPSE – IWOCS PACKAGE INTEGRATION

3C Metal has completed an Intervention Workover Control Systems (IWOCS) package and gravel pack line installation for Seadrill, West Eclipse, after being involved with the project from a very early stage.



As part of the preparation for the new contract – which was at the time still to be signed between Seadrill and Exxon - Seadrill requested the involvement of 3C Metal for the concept preparation and analysis of the IWOCS package installation, gravel pack lines and other modifications.

Before any contracts were in place, 3C Metal performed various site visits, accompanied by Seadrill and the service providers that would be supplying equipment to be installed. The surveys included 3D laser scanning of all the critical areas of the vessel to reduce any lead time on engineering works. 3C Metal performed pre-engineering as part of the offer and concept submittal phase which reduced the lead time even further. From the date the purchase order was issued, it took



only six weeks to have the engineering completed and the prefabricated structures loaded on board.

The 3C Metal team efficiently installed structures and piping across the vessel which included the IWOCS reels, Schlumberger reels, electrical routing and connections, umbilical termination assembly (UTA) attachment on lower marine riser package, UTA storage platform, gravel pack lines on both starboard and port side, as well as routing pad eyes for umbilicals.

Through 3C Metal's partner company, Belmet Namibia, assistance was also supplied to Cameron for the cleaning and handling of the West Eclipse risers being inspected.

## BOLETTE DOLPHIN – MPD UPGRADE

3C Metal Middle East was awarded a contract to install a semi-permanent Weatherford MPD package on board the Bolette Dolphin drill ship, located in Ivory Coast.



Due to the rig being in operation, the biggest challenges were to reduce hot work to an essential minimum; to not shut the drill floor down in any way that would disrupt operations when pressure testing and interfacing; and maintaining the vessel's DNV Drill Notation Standards.

With a detailed laser scan of the vessel, 3C Metal was able to produce an accurate 3D model and pre-fabricate up to 90% of the piping runs before shipping to location.



Additional fully pre-fabricated structures for the umbilical reels on the Xmas tree trolley, along with detailed engineering and positioning of equipment on the deck, allowed a minimal impact on the structural modifications during the installation.

With careful planning from the operations and project teams, the full installation was executed within a month, utilizing an expert team comprised of ten highly skilled 3C Metal craftsmen. This complex scope was completed without any incidents.



## TIGF - RZL PROJECT

Following the end of the historical Total gas exploitation site in Lacq, TIGF awarded the RZL Project to 3C Metal.



This difficult multi-discipline project is a new challenge for 3C Metal and its partners. The RZL project will divert the main gas interconnections, operated by TIGF, from the former Total gas factory in the area. This 18 month project includes the construction of six main pipelines, four horizontal drilling operations of 40m long, two horizontal directional drilling

operations of 450m long, two 100m deep vertical drilling operations for cathodic protection, the construction of four gas interconnection sites including process equipment installation such as gas counting, safety valves and coalescent filters.



## UMW — NAGA 8

3C Metal successfully completed fast-tracked upgrades on board the UMW Naga 8 in Kemaman.



The UMW Naga 8 is a jack-up rig drilling in the northeast of Malaysia. The rig and operators requested a few upgrades to adapt it for the high-pressure and high temperature (HPHT). This involved the addition of a new kill-and-choke line inlet and outlet on the blowout preventer (BOP). This resulted in the requirement to install additional Koomey lines to operate the new valves as well as re-routing of the BOP tubing to make space for the new valves assembly.

3C Metal completed the fabrication and installation of the six additional Koomey lines. These were then pressure tested and

flushed to reach a cleanliness level of NAS 6. The BOP tubing was modified using dedicated Swagelok tubing tools and flushed with foam bullets.

3C Metal was also awarded new work for high pressure (HP) lines running from the cement to the standpipe manifold. All manufacturing and installation was completed with a very short lead-time using the 3C Metal stock in the Johor Bahru facility.

These scopes were successfully completed on a very tight schedule; one month for supply, fabrication and installation.

## NOBLE BULLY II — HSE AWARD FOR 3C METAL

3C Metal Supervisor, Mihai Dutu, was recognized as 'Hero of the Week' for his commitment towards safe operations while completing multiple projects on board Noble Bully II.

3C Metal and Noble Bully II have been collaborating since late 2015, when the 3C Metal team finalized the integration of the MPD System which was started in the shipyard while in Singapore. Following this successful offshore installation, the team was mobilized for several other projects including modification of the BOP piping and tubing, HP piping and other maintenance work scopes.

In total, there have been roughly 1,500 man-days worked on the Noble Bully II. Thanks to a continuous focus on safety by both the Noble Rig Crew and 3C Metal Offshore Installation team, they managed to achieve zero LTIs and no recordable incidents over that period. 3C Metal would like to thank Noble and the Bully II Crew for their recognition and helping us achieve this result.



## ZERO LTIS FOR OFFSHORE PROJECTS IN 2016

3C Metal has achieved a year of safety excellence having received zero lost time injuries (LTIs) for offshore projects in 2016. This was achieved with close to 400,000 offshore man-hours worked. These results maintain 3C Metal Group's offshore safety record, bringing the total over a three year period to 1,500,000 offshore man-hours achieved with zero LTIs. This milestone is a direct reflection of 3C Metal's commitment to the highest standards for safe work practices. In 2017, we aim to duplicate this result by continuing to foster a strong safety culture that starts with visible safety leadership and encompasses all our operations.

## 3C METAL SOUTH AFRICA NOW A GENERAL ELECTRIC CHANNEL PARTNER FOR MARINE DRILLING RISERS

3C Metal South Africa's specialist division, 3C Belmet Services, is proud to announce becoming a General Electric (GE) Channel Partner for marine drilling risers. This strategic arrangement enables 3C Belmet Services to service drilling contractors directly whilst maintaining full original equipment manufacturer (OEM) certification of equipment at a competitive price point.



The new business model forms an additional business arrangement to the approved vendor model currently in place, where drilling contractors would deal directly with GE.

Through strict regulation, GE enables 3C Belmet Services as a channel partner, and an established vendor in the field, to further responsibility in the recertification process. This results in a cost-effective solution for drilling contractors to maintain their marine drilling risers. GE original OEM certification will still be issued by 3C Metal as a Channel Partner. This includes the Certificate of Conformance (COC), Certificate of Services (COS) and Statement of Fact (SOF).

The channel partnership extends regionally to cover: offshore marine drilling riser inspection for Sub-Saharan Africa; onshore riser inspection, overhaul and recertification in South Africa; and GE drilling division product line (marine drilling risers and associated equipment) parts supply for Sub-Saharan Africa.



The existing approved vendor remains in place allowing 3C Belmet Services to support GE in servicing marine drilling risers and capital drilling equipment (CDE) not covered by the channel partner model, such as telescopic joints, diverters, flex joints and H4-connectors.

3C Belmet Services continues to develop and offer a full range of services for maintenance of marine drilling risers and associated capital drilling equipment. This includes; a fully equipped inspection and repair facility in Cape Town; high pressure cleaning of risers and long-term preservation (onshore and offshore deployment); onshore riser inspection and repair deployment to remote locations; and offshore riser inspection deployment.





## 3C METAL EXHIBIT AT ADIPEC

The Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) 2016 was held from 7 to 10 November. ADIPEC is a flagship event and is the world's most influential Oil and Gas exhibition and conference in the Middle East.



3C Metal, in partnership with HYD&AU, had a promotional stand at the exhibition's French Pavilion. In attendance was 3C Metal's senior management including Managing Director, Philippe Boy.

Mr Boy said, "ADIPEC attracts representatives from the world's largest oil producers and service providers. By having 3C Metal represented at the 2016 conference, we were given

a unique opportunity to showcase our brand and demonstrate the holistic and cost-effective solutions we provide to clients in the oil and gas sector."

Industry delegates who visited the 3C Metal stand were able to speak with members of the team and learn more about our services as well as receive our information and promotional items.

## 3C METAL GROUP WELCOMES NEW EMPLOYEE

Kristin Strambi joined us in November as Group Marketing and Communications Officer based in 3C Metal Middle East. Kristin has a Bachelor of Journalism and has previously worked in Australia and the UK for private and public sector companies in various marketing and communications roles. She will bring us her experience in external and internal communications, public relations, marketing communications and branding.





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