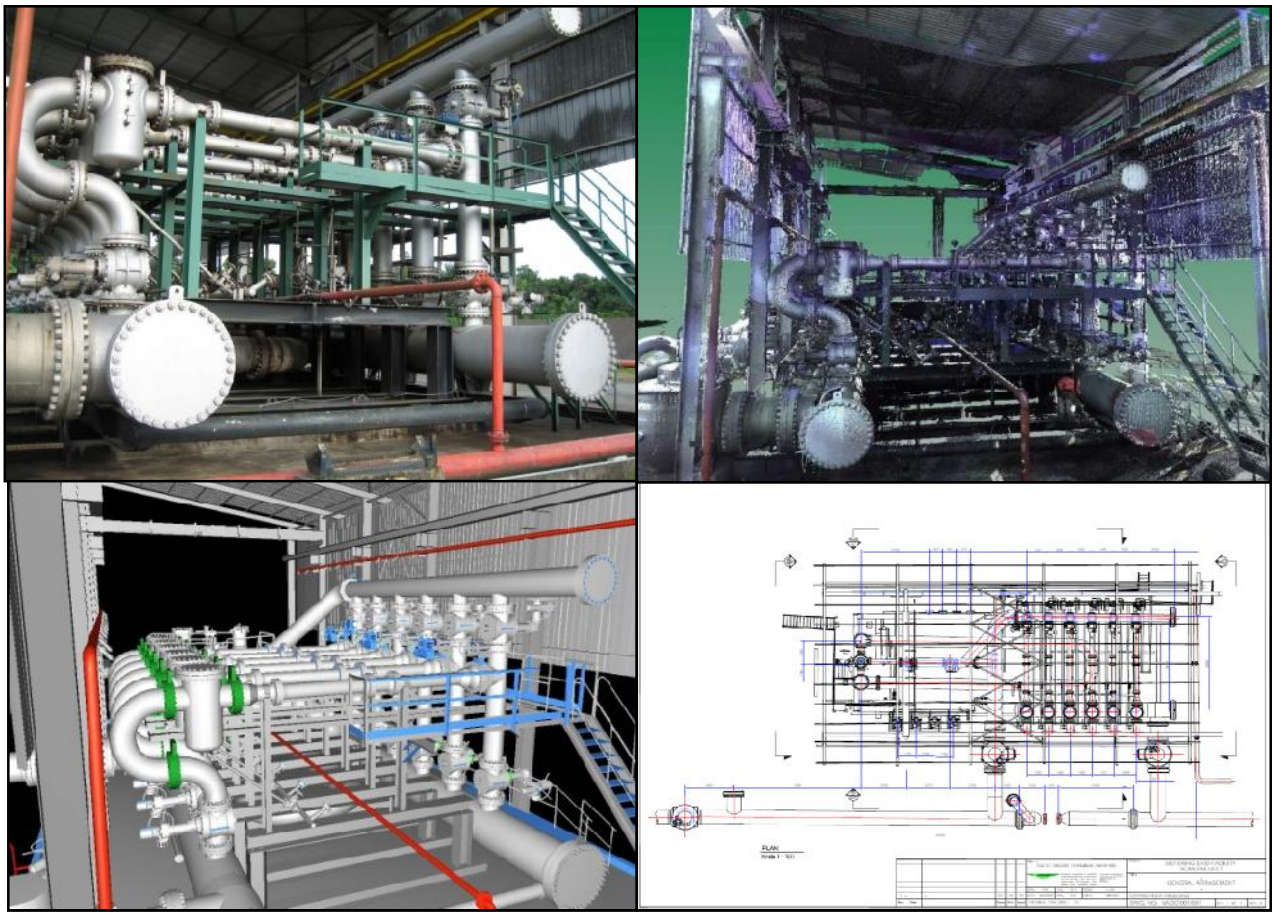


3D LASER SCANNING

NAOC (Nigeria Agip Oil Company) / ENI

Project Date:

April 2006

Location:

Port Harcourt, Nigeria

Project Duration:

2 days for data acquisition and
15 days for data processing

Deliverables:

Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D Model
2D AutoCAD drawing

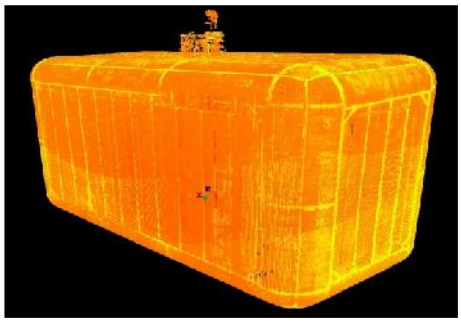
ENI is in the process of gathering existing data on their facilities around the world to update their database. The existing database needs to display all equipment including standards and drawings together with "as built" existing conditions of their facility for maintenance purposes.

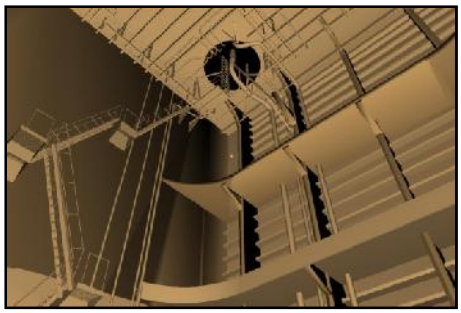
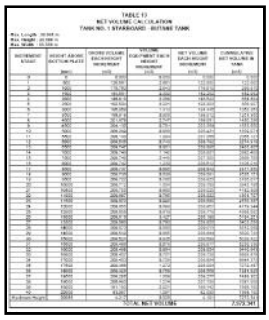
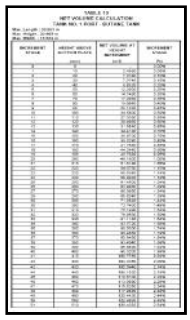
A Metering Skid facility was scanned including the structure, crude oil piping system and fire water system.

A georeferenced point cloud was produced from which a 3D Model and 2D AutoCAD drawing was created. Drawings were produced using AutoCAD, including GA's, Elevations, Cross Sections, and 3D isometric drawings were also produced.

3D Laser Scanning Services





3D LASER SCANNING

Gas Concord Tanker Refit, Singapore

Project Date:

May 2006

Location:

Singapore

Project Duration:

10 days for data acquisition and
14 days for data processing

Deliverables:

Site Survey Report
HD Photos
3D Model
2D AutoCAD drawing
Tank Table

We captured the as-built status of the 10 Nos tanks within the tanker using laser scanning and conventional survey techniques. The laser scanner surveyed the tanks using a rapid (10,000 points/minute) pulsed laser (similar to total station survey but much faster) a cloud of points was produced (x, y, z co-ordinates at an accuracy of 5 mm) of the inside of the tanks including inside walls, internal equipment and structure.

The total volume of each tank was calculated as well as volume of liquid at different heights. The results were corrected for temperature & bulging as per ISO 8311. Tank tables were then produced which were used for "transfer of custody" metering.

3D Laser Scanning Services

3D LASER SCANNING

Upper Zakum Field CCP offshore platform & Zirku Island Facility

Project Date:

Mei 2007

Location:

Abu Dhabi

Project Duration:

14 days for data acquisition and 75 days for data processing

Deliverables:

Site Survey Report

Truview 3D Point cloud

HD Photo and 360 degree panoramic

3D Model

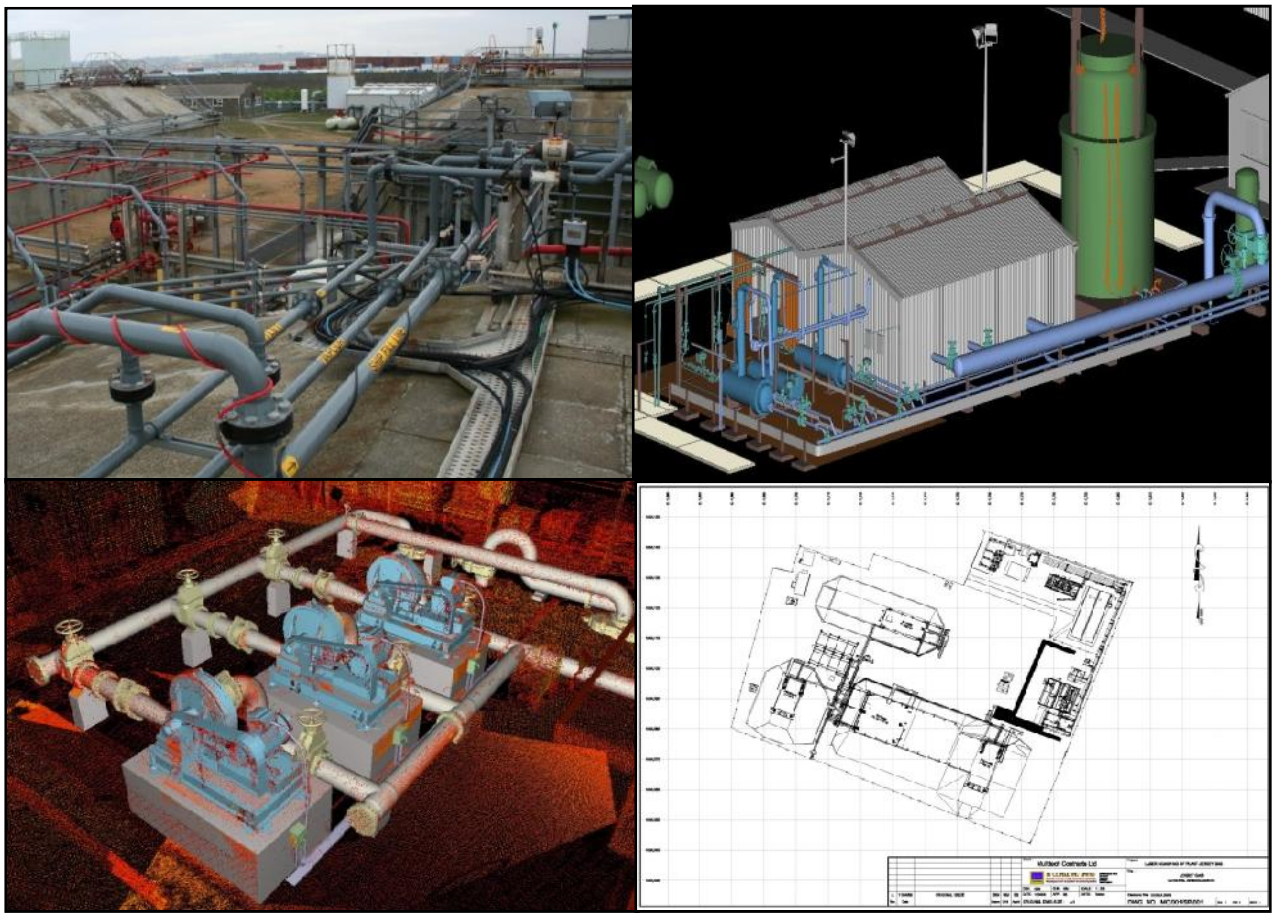
2D AutoCAD drawing

JP Kenny are presently in the process of designing a new Main Oil Line (MOL) between two locations in particular Zirku Island facility and an offshore platform in the Upper Zakum oilfield. To assist and to form part of this process of designing, it was required to obtain physical existing data in the form of 'As-Is' / 'As-Built' information for both facilities.

ZADCO commissioned JP Kenny to carry out a design for the new MOL based on "as built" survey using 3D laser scanning. Two locations were scanned in 14 days and the point cloud used to generate a 3D as built model in 3D AutoCAD.

The 3D model has enabled efficient engineering design to be undertaken as well as produced a 3D "as built" record of the facilities surveyed which will form part of the ZADCO asset database within CAD environment.

3D Laser Scanning Services



3D LASER SCANNING

Jersey Plant

Project Date:

December 2007

Location:

United Kingdom

Project Duration:

7 days for data acquisition and
35 days for data processing

Deliverables:

Site Survey Report

Truview 3D Point cloud

HD Photo and 360 degree panoramic

3D Model

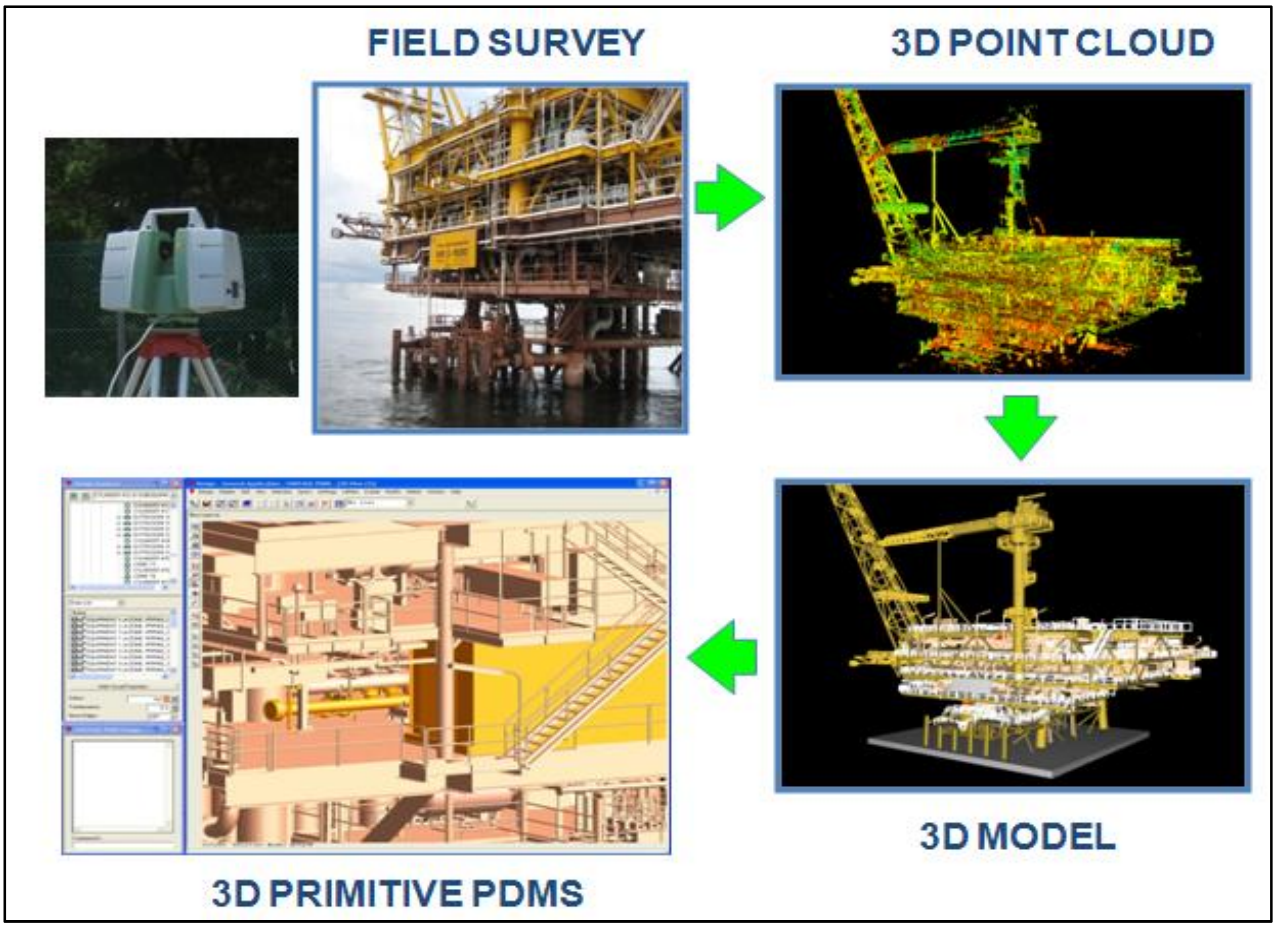
2D AutoCAD drawing

Multitech Contracts Ltd need to generate 3D Modelling & General Arrangement drawing for plant project in Jersey – UK.

Scanning has already been completed using HDS 6000 and the point cloud is available as 50 scans which have been registered & geo-referenced. 3D model will be created as above in Cyclone and checked against the point cloud. The model was converted into 3D ACAD format and a General Arrangement drawing produced in 2D AutoCAD.

The 3D model has enabled efficient engineering design to be undertaken as well as produced a 3D “as built” record of the facilities surveyed which will form part of the company asset database within CAD environment.

3D Laser Scanning Services



3D LASER SCANNING

Peciko MWP-A,MWP-B & SWP-E Offshore Platform

Project Date:

June 2008

Location:

East Kalimantan

Project Duration:

21 days for data acquisition and 480 days for data processing

Deliverables:

Site Survey Report

Truview 3D Point cloud

HD Photo and 360 degree panoramic

3D AutoCAD Model

TOTAL subsidiary company in Balikpapan commissioned TECHNIP to carry out an engineering and design of tie ins, retrofit and new works to Pecikko MWP-A, MWP-B, and SWP-E wellhead platform at Senipah - Balikpapan, East Kalimantan. Technip need accurate 3D survey data including 3D visualisation in ACAD with the 3D model to enable follow on engineering design of the tie ins, retrofit and new works.

We were awarded by Technip in April / May 2008 the Laser Scan 3D as-built survey as their specialist sub-contractor. We were using new technology of laser scanning to capture survey data in 3D which has enabled 3D visualisation of the facility which can then be used as a 3D base model to plot & visualise the existing platforms in both 2D and 3D..

3D Laser Scanning Services

3D LASER SCANNING
Suban Gas Plant

Project Date:
December 2010

Location:
Palembang

Project Duration:
12 days for data acquisition and
60 days for data processing

Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D Primitive PDMS Model

We, after a competitive bid tender, have been awarded on 15th December 2010 SubContract no: 402000-00178A to provide 3D Laser Scanning Survey Services for the Suban Gas Plant in relation to the 5th train upgrade project for Conoco Phillips via Worley Parsons Indonesia.

As part of the above work project managed by Worley Parsons Indonesia, 3D laser scanning survey is required together with provision of a basic geometric model in PDMS format for their FEED engineering work.

The laser scanning survey will consist of a Laser Scanning 3D as-built survey and the development of a 3D PDMS primitive model of the existing facilities. The 3D model generated from pointcloud data was converted into a 3D Primitive PDMS Model version 12.

3D Laser Scanning Services

3D LASER SCANNING
West Seno Field

Project Date:
August 2011

Location:
East Kalimantan

Project Duration:
21 days for data acquisition and
450 days for data processing

Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D Primitive PDMS Model

CHEVRON MAKASSAR LIMITED, as operator, plans to develop the West Seno – Deep Water Production which is consist of FPU (Floating Processing Unit) and TLP – A (Tension Leg Platform). The West Seno field is located between approx. 50 km strike through from Bontang and approximately 166 km north of Balikpapan.

We have been awarded by CHEVRON the Laser Scan 3D as-built survey as a specialist sub-contractor, we were using new technology of laser scanning to capture survey data in 3D which will enable 3D visualisation of the facility which can then be used as a 3D base model to plot & visualise the existing platforms in 3D Primitive PDMS format.

3D Laser Scanning Services

3D LASER SCANNING
Mutiara Onshore Facility

Project Date:
Mei 2012

Location:
East Kalimantan

Project Duration:
14 days for data acquisition and
95 days for data processing

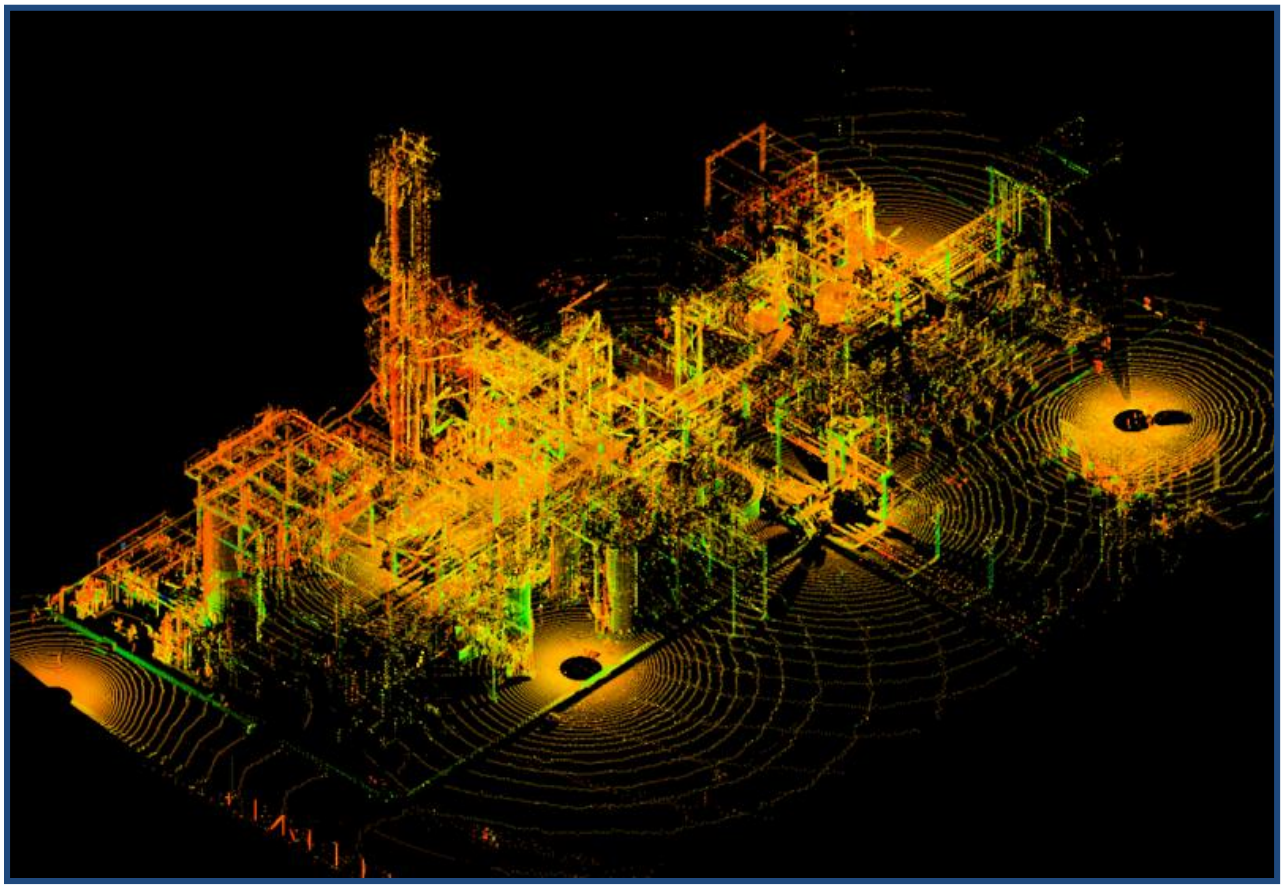
Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D Primitive PDMS Model

VICO Indonesia is a major gas and oil producer and was the first company to develop and bring LNG to Indonesia in the late 1970s. For more than three decades, VICO has been the leader in Indonesia finding and developing energy resources vital to the economic, infrastructure, and social development of a modern vibrant nation.

Vico Indonesia need an as built for existing and new plant by installing new additional surface facilities and requested us to conduct Laser Scanning Survey in Mutiara Field area to support their project.

The laser scanning survey will consist of a Laser Scanning 3D as-built survey and the development of a 3D model of the part of existing facilities, the 3D model generated from pointcloud data will then be converted into 3D Primitive PDMS Model and finally produced into fully intellegent.

3D Laser Scanning Services



3D LASER SCANNING

Maharaja Lela Jamalulalam field

Project Date:

March 2013

Location:

Brunei Darussalam

Project Duration:

7 days for data acquisition and
35 days for data processing

Deliverables:

Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D Primitive PDMS Model
2D AutoCAD drawing

Present in Brunei since 1986, Total E&P Borneo BV (TEPB) operates the Maharaja Lela Jamalulalam field in Block B with joint venture with Shell Deep-Water Brunei Ltd & Brunei Government located at Onshore Processing Plant (OPP) in Lumut.

Total E&P Borneo BV (TEPB) is planning to have a topographic map for their Maharaja Lela Jamalulalam field and also they need the as built for the existing plant for further engineering purpose.

TECA, as the contractor, have been award us for the 3D Laser Scan as-built survey work, we use new technology of laser scanning to capture survey data in 3D which will enable 3D visualisation of the facility which can then be used as a 3D base model to plot & visualise the existing facility in 3D format.

3D Laser Scanning Services

3D LASER SCANNING
FFB & FK PLATFORMS

Project Date:
February 2014 - 2017
Location:
Offshore Northwest Java
Project Duration:
5 days for data acquisition and
45 days for data processing
Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D PDMS Semi intelligence model
3D PDMS Full intelligence model
2D AutoCAD drawing, such as:
Update P&ID
Update Equipment Layout
Isometric drawing (including MTO)
Structural Plan

PT PERTAMINA PHE ONWJ is the operator of ONWJ block over a concession of 8,300 sq. kilometers in the Java Sea, Indonesia, extending between the sea off Cirebon and the Thousand Island off Jakarta.

PT PERTAMINA PHE ONWJ has identified the need for using the 3D laser scanning technology for updating the data and as built drawing both for onshore and offshore facility, it's need an accurate 3D survey data including 3D semi and full intelligent PDMS model to enable follow on engineering design of the tie ins, retrofit and future works.

This project starting from site orientation, survey 3D laser scanning and modeling point cloud that produce 3D models solid objects both in CAD software and 3D PDMS software and also for 2D Drawing as documents deliverable which is as part of 3D assets management.

3D Laser Scanning Services

3D LASER SCANNING
FPSO ANOA

Project Date:
September 2015 - 2016

Location:
Natuna Sea

Project Duration:
21 days for data acquisition and
120 days for data processing

Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D PDMS Semi intelligence model

The Natuna Sea Block A PSC is located in the Natuna Sea, covering an area of 5,000 sq km with water depths of between 250 and 350 feet. It is about 1,100 km north of Jakarta. Geologically, it is part of the West Natuna Basin.

Premier Oil Natuna Sea BV (PONS BV), as an operator, plans to made some modification both at FPSO ANOA. PONS BV has recognized the complexity of additional works associated with the modifications field and the necessity to minimize shut down times during the works, It has therefore decided to have an accurate 3D model developed using the latest laser survey techniques to facilitate engineering and to minimize risks associated with clashes during the installation period.

We have been awarded by PT Synergy Engineering as contractor to PONS BV the Laser Scan 3D as-built survey as a specialist sub-contractor, we are using new technology of laser scanning to capture survey data in 3D which will enable 3D visualization of the facility which can then be used as a 3D base model to plot & visualize the existing facility in 3D format.

3D Laser Scanning Services

3D LASER SCANNING
GAJAH BARU CPP & GBWP

Project Date:
November 2015 - 2016

Location:
Natuna Sea

Project Duration:
30 days for data acquisition and
210 days for data processing

Deliverables:
Site Survey Report
Truview 3D Point cloud
HD Photo and 360 degree panoramic
3D PDMS Semi intelligence model

The Natuna Sea Block A PSC is located in the Natuna Sea, covering an area of 5,000 sq km with water depths of between 250 and 350 feet. It is about 1,100 km north of Jakarta. Geologically, it is part of the West Natuna Basin.

Premier Oil Natuna Sea BV (PONS BV), as an operator, plans to made some modification both at GAJAH BARU CPP and GBWP. PONS BV has recognized the complexity of additional works associated with the modifications field and the necessity to minimize shut down times during the works, It has therefore decided to have an accurate 3D model developed using the latest laser survey techniques to facilitate engineering and to minimize risks associated with clashes during the installation period.

We have been awarded by PT Synergy Engineering as contractor to PONS BV the Laser Scan 3D as-built survey as a specialist sub-contractor, we are using new technology of laser scanning to capture survey data in 3D which will enable 3D visualization of the facility which can then be used as a 3D base model to plot & visualize the existing facility in 3D format.

3D Laser Scanning Services

Cilacap Blue Sky Project (PLBC)

3D LASER SCANNING
Cilacap Blue Sky Project (PLBC)

Project Date:
April 2016

Location:
Cilacap, Middle Java

Project Duration:
14 days for data acquisition and data processing

Deliverables:
Original raw data as ZFS files
Registered ZFS files
PTX files after registration
Land Survey report and calculation data (X,Y,Z coordinates for each target)
Registration QA/QC report
3D laser scanning map in DWG format

JGC Indonesia and their consortium with Encona Inti Industri and Toshiba Plant System & Services, has identified the need for using the 3D laser scanning technology for the design for revamping work for Cilacap Blue Sky Project (PLBC), at Pertamina RU IV Cilacap, Indonesia.

JGC Indonesia has recognized the complexity of additional works associated with the modifications field and the necessity to minimize shut down times during the works, It has therefore decided to have an accurate 3D point cloud developed using the latest laser survey techniques to facilitate engineering and to minimize risks associated with clashes during the installation period.

We was awarded by JGC Indonesia as contractor to Pertamina RU IV Cilacap the Laser Scan 3D as-built survey as a specialist sub-contractor, we will using new technology of laser scanning to capture survey data in 3D which will enable 3D visualization of the facility which can then be used as a 3D base model to plot & visualize the existing facility in 3D format.

3D Laser Scanning Services