

Cirras & Drawing conversion project

- 1. Who we are
- 2. What we do
- 3. What we can do

1. Who we are



Established in Singapore in 1999, Primalux Technology was founded on a vision of providing engineering industries with integrated, innovative and cost-effective computer solutions. The strength of the company comes from the global exposure and rich experiences of its founders in the process engineering industries, system design and implementation.

At the moment the number of employees involved in the work on the Sakhalin 2 project is about 40 people (including draftsmen, engineers, quality control specialists, etc.)

2. What we do



Working with Sakhalin Energy, the company provides a software package CIRRAS. CIRRAS ia an acronym for <u>Corrosion Integrity Risk Reliability Assurance System</u>, in the integrity management industry it belongs to the group of Corrosion Integrity Management Systems (CIMS).

Also in CIRRAS project there is a subproject – Drawing Conversion Project (DCP). The goal of DCP is the conversion of more than 70,000 drawings of Sakhalin Energy into the format of DWG.

2.1 - Task & Responsibilities



Responsibilities:

- Convert the drawings error-free, with speed and accuracy.
- Check correct CAD Attribute names (Smart Drawing).
- Perform self-check of the drawings (Pre-checks, L0 checks & Cross Checks).

Tasks:

- ☐ Convert drawing from Source file (PDF/DGN/TIFF/DWG) to **DWG 2010** File format.
 - Download "Source file" from "Drawing Task" in EDMS was assigned by your Batch Owner (BO).
 - Before conversion Perform Pre-check guidelines if any doubts ask your BO.
 - During conversion The Technical Query (TQ) should be verified with BO to minimize error.
 - After conversion Perform Self check (L0 checklist), the converted drawing must be error-free.
 - After L0 checks has passed, upload the converted file into the server.
 - If unnecessary and silly errors are found more than once, then Corrective Action Report (CAR) will be raised.

2.2- SEIC – Drawing Type



For this conversion project, we will be covering a total of 14 different drawings type for each Asset & Locations. All the drawings listed below have to be converted. However Drawing types 5 to 14 will also need to be a Smart Drawing.

- **1.** Certified Equipment Drawings.
- **2.** Equipment Location Plan.
- **3.** Facility Block Diagram.
- **4.** GA Civil & Structural.
- **5.** GA Overall Plan Drawings.
- **6.** GA Pipeline Schematic.
- **1.** GA Piping Drawings.
- **8.** Isometric Drawings.
- **9.** Pipeline Detail Drawings.
- **10.** Plot Plans Drawings.
- **11.** Process Engineering Flow Scheme (PEFS).
- **12.** Process Flow Scheme (PFS).
- **13.** Vessel Detail Drawings.
- **14.** Piping & Instrumentation Diagram (P&ID).

General Drawings :- 1~4

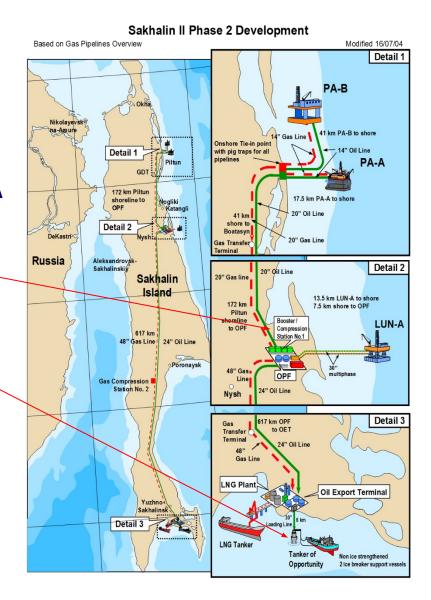
Smart Drawings :- 5~14

2.3 - SEIC - Assets & Locations



List of Asset locations for SEIC project

- **1.** 2000 (PA-A) PA Field Platform A
- 2. 3000 (PA-B) PA Field Platform B
- **3.** 4000 (LUN-A) Lunskoye Field Platform A
- **4.** 5000 Oil and Gas Pipelines
- **5.** 5200 Compressor & Booster Station 2
- **6.** 5500 (OET) Oil Export Terminal
- 7. 5510 (TLU) Tanker Loading Unit
- **8.** 6000 (OPF) Onshore Production Facility
- **9.** 7000 (LNG) Liquefied Natural Gas Plant

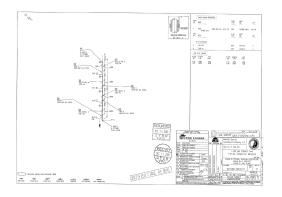


2.4 - SEIC — Drawing Classification Primalux Technology Pte Ltd



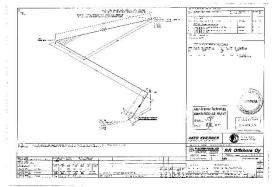
A) Isometric Drawing

(i) Simple



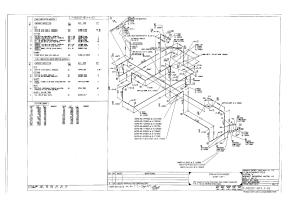
(Drawing with 1 to 4 pipelines and minimum information present on the drawing).

(ii) Medium



(Drawing with 5 to 8 pipelines and minimum information present on the drawing).

(iii) Complex



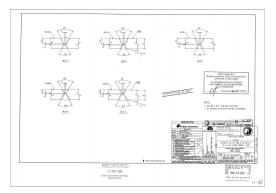
(Drawing with more than 8 pipelines and more information present on the drawing).

2.5 - SEIC — Drawing Classification Primalux Technology Pte Ltd

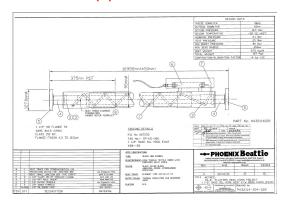


B) Vessel Drawing (GA Details Drawing)

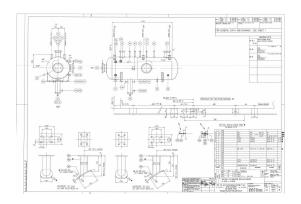
(i) Simple



(ii) Medium

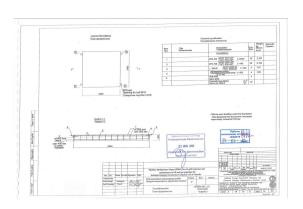


(iii) Complex

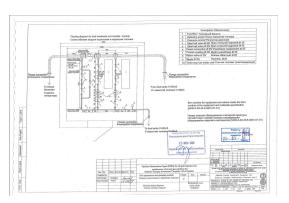


C) Plot Plan Drawing

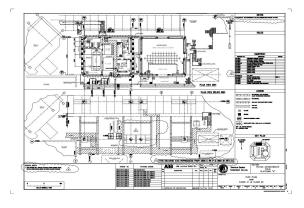
(i) Simple



(ii) Medium



(iii) Complex



2.6 - Smart Drawing



What is SMART Drawing?

A SMART drawing is defined in CAD drawing, which will add some attributes for equipment such as tanks, vessels, columns, heat exchangers, valves and corrosion loops for inspection, by using Blocking and Grouping method.

Blocking

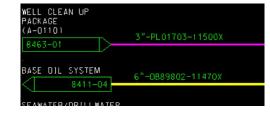
- Relief valves
- Pressure safety valves





Grouping

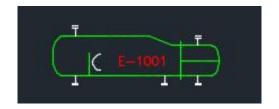
- Equipment (Tanks, Vessels, Columns, Heat Exchangers, Filters & major equipment with underline of Tag number <u>X-XXX</u> except Pump, Motor and Valve)
- Pipeline Identity Loops (PIL)
- Corrosion Loops (CL)





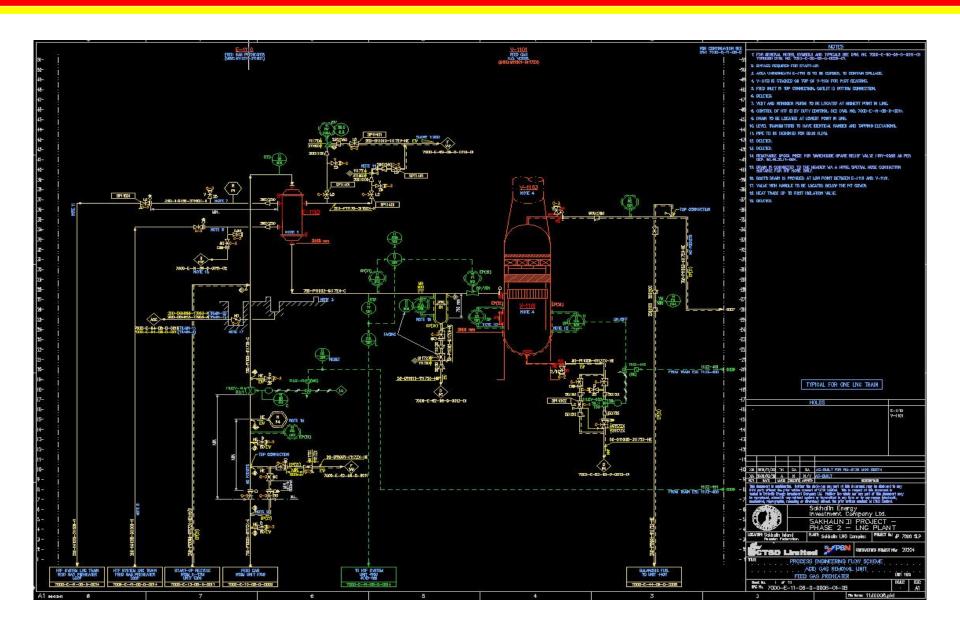






2.7 - Converted drawing — PDF ~ DWG

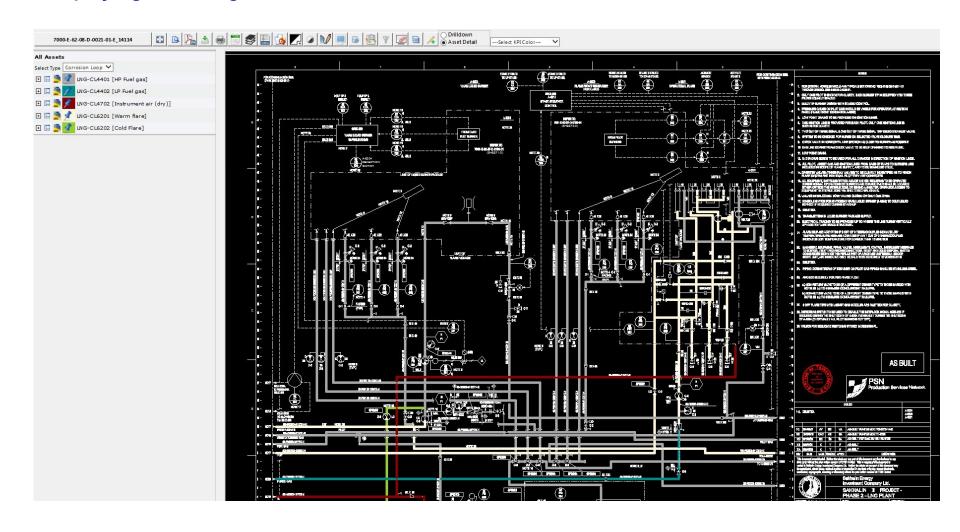




2.8 - Working spaces of CIRRAS



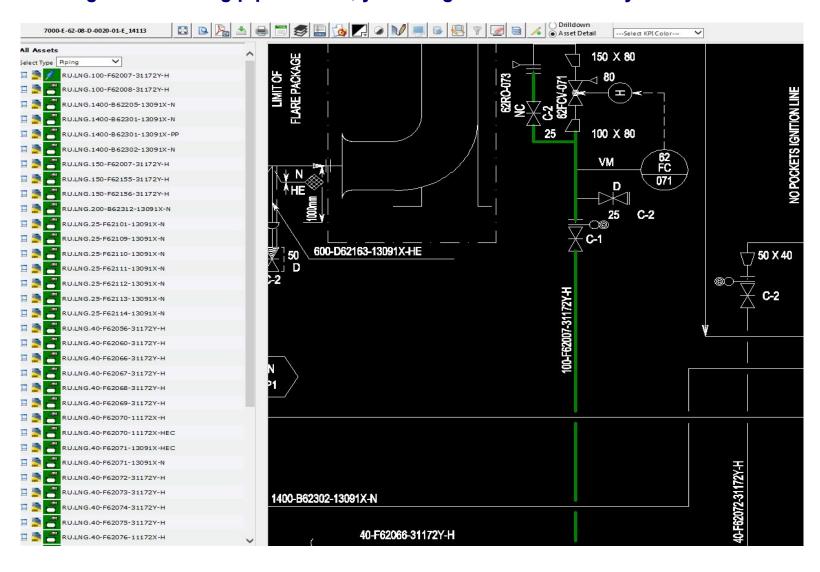
Displaying a drawing in CIRRAS



2.8 - Working spaces of CIRRAS



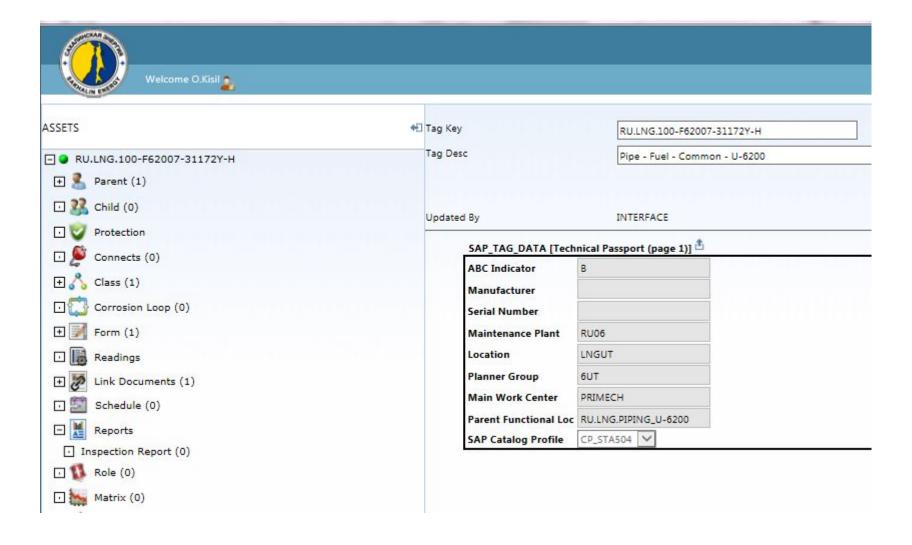
Selecting an interesting pipeline line, you can get all the necessary information about it



2.8 - Working spaces of CIRRAS



Information on the selected line of the 100-F62007-31172Y-H



2.7 – Quality control



All produced drawings undergo a multistage quality control system.

- Precheck
- L0 check
- L2 check
- L3 check

For each level of verification, its own procedure is developed - checklist. Each level of verification is performed by different specialists. This approach allows us to achieve a high level of quality products

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_	L0 QA/QC Form			1 Document Information Chec	-1		
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	Document Information Check:	Toolt	ips in EDMS		1.2 Document number in Title Block		
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	Symbol used from symbol library as same as source file Words & sentences are key-in correctly	Exa_ Did	1	Document Information Check:			
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	Stamp used from library as same as source file	Exa	1.2	Document revision number as per registered in EDMS.			_
	Setting display arc and circle	Did	1.3	Document revision date as per registered in EDMS.			
1	External References	Did	1.4	Document classification correctly classified in EDMS.		- F	
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	Smart Drawing Attributes Check:	Too	2.1	General note, legend, symbol & bill of material are clear readable.	1		
1	Block RV, PSV attribute and tag number	Bloc	2.2	Font/text/sentence are clear readable without overlap.			
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	Corrosion Loop (CL) Grouping as per CL mark-up drawing	Sele	2.4	Equipment/instrument's tag number are clear readable.			_
	Attribute tag number entered correctly into an excel spreadshe	BIOC	2.5	Centre line elevation for horizontal vessel, pump, nozzle are clear readabl	le.		
			2.6	Pipeline number, slope for launcher/receiver, vent and drain are clear rea	dable.		
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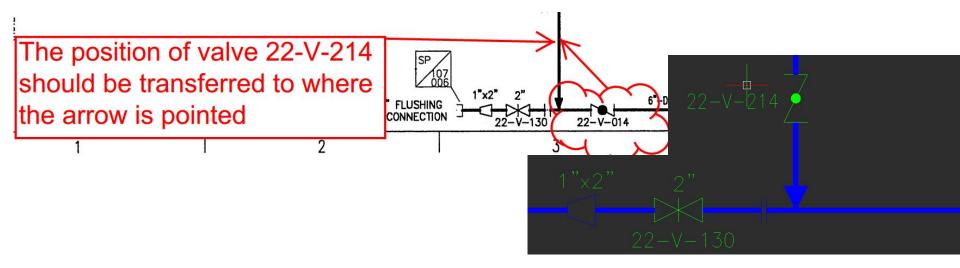
3. What we can do



Six specialists work in the office of the company in Yuzhno-Sakhalinsk. Our professional competence allows to work with drawings from different disciplines, such as:

GA Civil & Structural, GA Pipeline Schematic, GA Piping Drawings, Isometric Drawings, Pipeline Detail Drawings, Plot Plans Drawings, Process Engineering Flow Scheme (PEFS), Process Flow Scheme (PFS), Vessel Detail Drawings, Piping & Instrumentation Diagram (P&ID), and many others drawings.

We can convert, update, modify drawings. Create new drawings based on data and reports.



3. What we can do



Our team carried out the DWT project. Several templates of drawings were created for subsequent use by Sakhalin Energy contractors.

The results of the work on this project will lead to a uniform standard for drawing up drawings from various contractors of SEIC.

Among them are templates for: Plot Plans; Isometric drawings; PEFS/P&ID.

These templates contain a predefined set of layers and attributes coordinated with the customer



