



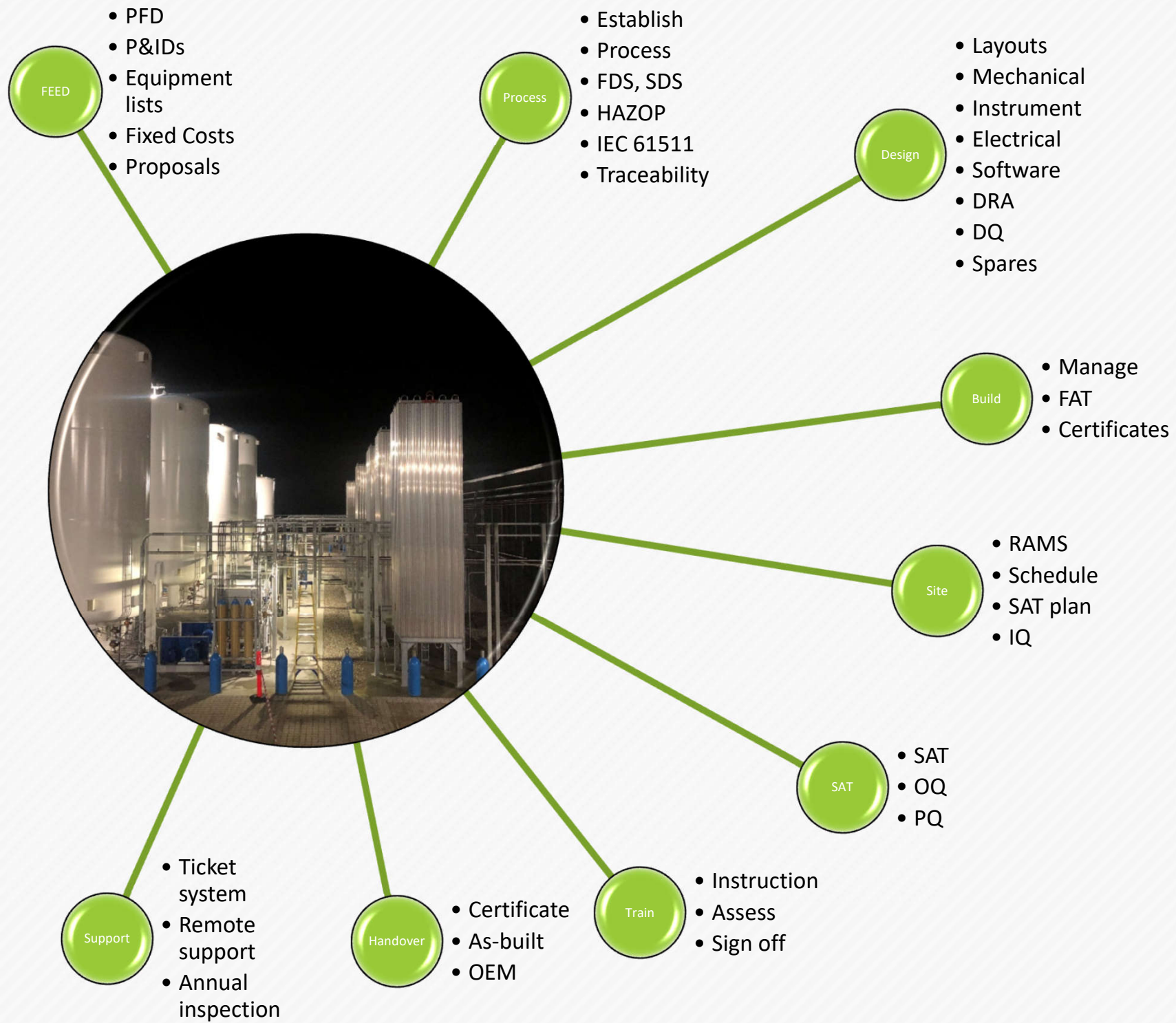
CLEAN AGENT & IG FILLING – BY IGAS TECHNOLOGY SOLUTIONS

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We are World Leaders in the innovative design, engineering and delivery of technical solutions to the Industrial Gases & Clean Energy sectors, providing guaranteed, risk-free solutions to maximise return on investment for our customers.

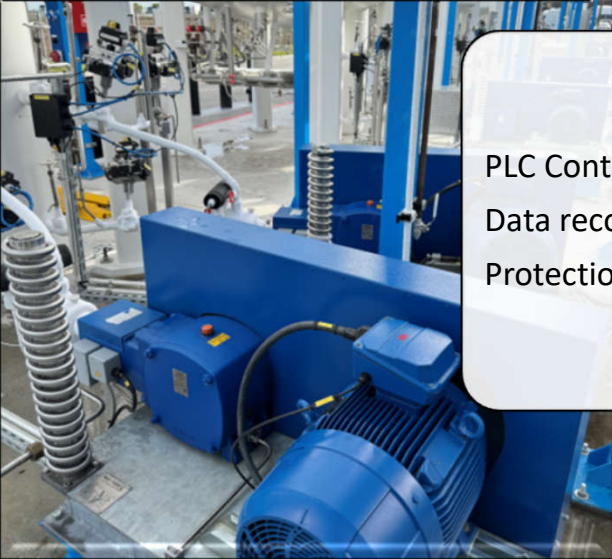
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Modular – Robust - High Quality – Options - Factory Built - Factory Tested

WHY CHOOSE IGAS – FACTORY BUILT PACKAGES

Pump Systems (IG)



PLC Control
Data recording
Protection Features

Pump Systems (Clean Agent)



Pump Panels



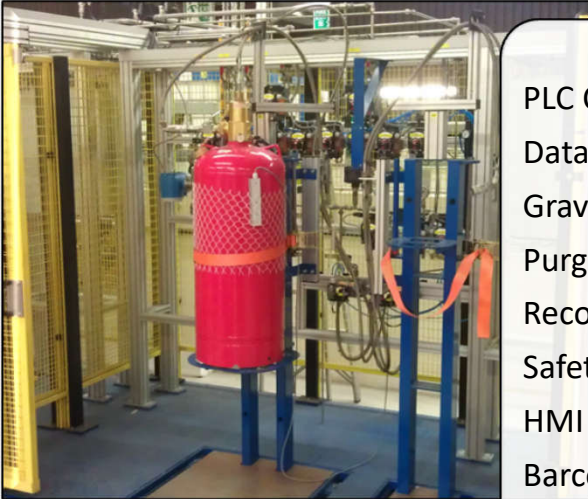
Pump Panel HMI



Modular – Robust - High Quality – Options - Factory Built - Factory Tested

WHY CHOOSE IGAS – FACTORY BUILT PACKAGES

Filling Station (CA)



- PLC Control
- Data recording
- Gravimetric Filling
- Purge Stations
- Recovery
- Safety Cage
- HMI Interface
- Barcode interface

Central PLC & E/Stop Hub (HMI optional)



Functional Test (CA)



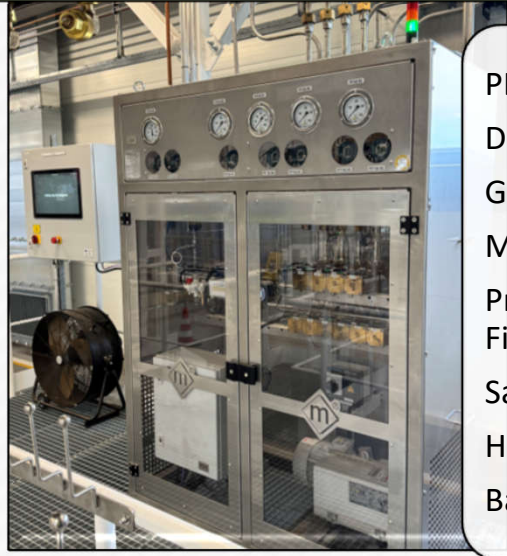
Operator Interface (CA) (HMI)



Modular – Robust - High Quality – Options - Factory Built - Factory Tested

WHY CHOOSE IGAS – FACTORY BUILT PACKAGES

Filling Module & Operator Interface (HMI) (IG)



- PLC Control (AiFill)
- Data recording
- Gravimetric Filling
- Mass Flow Filling
- Pressure Temperature Filling
- Safety Shielding
- HMI Interface
- Barcode interface

Pallet Filling (IG)



A/C Enclosure Linear Filling (IG)



Leak Test (IG)



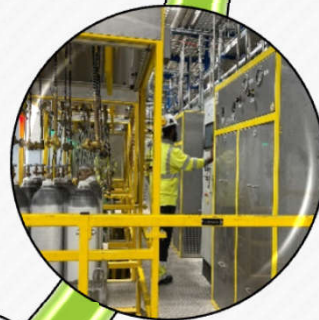
CA & IG Fill



What - a modular based control system; standardised software; efficient commissioning;



Who – In-house and IGPH group experts; Built upon tried and trusted Siemens S7-1500 (ET200SP) platform with Siemens SCADA & HMI Systems

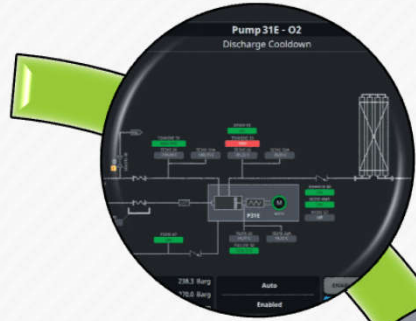


Where – deployed globally for clients; Multi language support; secure support from anywhere in world; local configuration

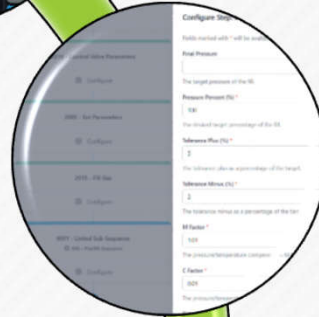


When – first commissioning in 2013

CA & IG Fill



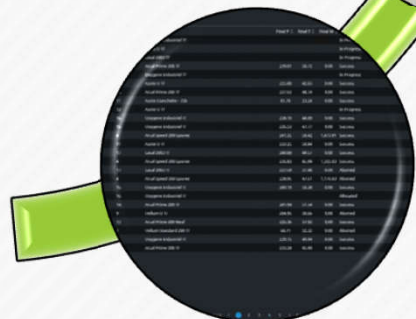
Operations – simple interface



Modular – building block construction; local configuration;



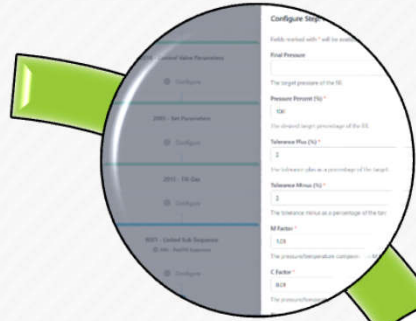
Process View – diagnostics for swift problem solving



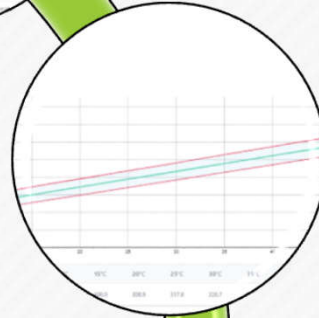
Dashboards, Records – statistics & metrics; historical data logging; auto fill records & certificate generation; database

An Evolution in Filling Technology

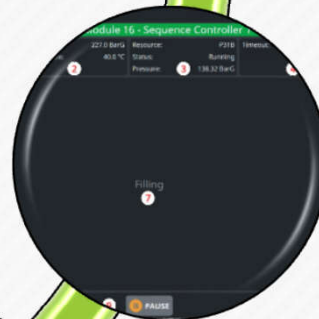
CA & IG Fill



Recipe based – easy creation/modify by Client; parameters for filling; held in SQL database



Recipe Example



Sequences – easy creation/modification by Client; execution order of tasks for filling; held in SQL database



Security – to ensure only authorised users can import recipes to the live system

An Evolution in Filling Technology

CA &
IG Fill



Sequence Design – Utilising a user-friendly flow-charting approach

Parameters – All technical parameters are explained in each step to ensure the correct values are entered

Parameters – are saved during commissioning meaning the user does not need to reengineer these every time

CA & IG Fill



Hardware – PLC’s Siemens S7-1500 based; long-term support; compact IO; direct mounting filling module



PLC Software – Siemens TIA PORTAL; Compliant with IEC61131-3 for programming Languages; IGAS use a mix of Ladder, S7-Graph, SCL and CEM



SCADA – HMI PC based using Windows 11 LTSC (Long Term Support Channel); Central system - changes reflected on each device instantly; touch screen; Fixed or pedestal mount;



Database – PostgreSQL database; Each Step of fill is recorded for later information

*Not Just an Evolution in Filling Technology,
THE Evolution in Filling Technology*

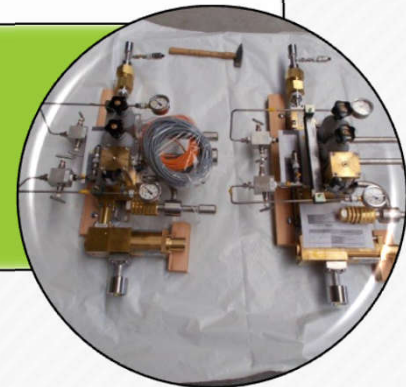
- Dedicated resource
- Offer at project
- Tailored

Support



- Dedicated resource
- Offered early in project
- Onsite for SAT
- Strategic holding

Spares





Projects

Cryogenic
Equipment

Filling
Equipment

Hoses &
Connectors

Refrigerant
Equipment





- Proven Track Record in global Solutions delivery
- Experienced Team
- Gases Expertise (Operations & Projects)
- Client Partnering
- Turnkey or Part-Turnkey
- Factory Testing Methodology, 'plug & play'
- High quality, proven technology