

PlantAsset Technology Inc.

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Company Overview

DIGITALIZATION TO TRANSFORM ENGINEERING AND O&M BUSINESS PROCESS

WE ARE THE PLANTASSET TECHNOLOGY INC., A CUTTING EDGE SOFTWARE SOLUTION PROVIDER AND PROFESSIONAL CONSULTING FIRM SPECIALIZING IN RIGOROUS DESIGN QUALITY CHECK, MASTER DATA BUILDING, AND PROJECT COLLABORATION.

WE SUPPORT SOUND DESIGN AND DATA-FIRST PROCESS THROUGHOUT A PLANT'S LIFECYCLE, FROM ENGINEERING TO OPERATION AND MAINTENANCE.

AS A DIGITAL TRANSFORMATION BUSINESS EXPERTS WITH GLOBAL PERSPECTIVE, WE PURSUE EXCELLENCE IN PLANT LIFE CYCLE MANAGEMENT TO HELP OUR CLIENTS ACHIEVE THEIR BUSINESS OBJECTIVES.

We support sound engineering, operation and maintenance

Our solutions and professional services support defect-free design and data-first process to ensure safety, operability and maintainability of assets.

Mission

Globally recognized DX experts in asset intensive industry

PlantAsset is well positioned to support plant industry's digital transformation with a global perspective and contributes to innovate the business processes of plant asset life cycle management.

Vision

We value humanity and pursue originality with an open mind

- Customer First – customer success is our success
- Professionalism - we have expertise and competitiveness based on understanding industrial requirements and latest IT trends
- Team Play - we progress through respect each individual and belief in team spirit

Values

Company History

01.

Incorporated in
Seoul, Republic
of Korea

03.

Joined Government
R&D projects related
to Digital
Transformation

05.

Signed a
partnership
agreement with
Oracle

07.

Debut in the global
market place
through participation
in ADIPEC 2023

2012

2013

2014

2016

2018

2020

2023

02.

Confirmed as a
Venture Enterprise

04.

Started
developing of
MDBS and
DQCS

06.

Launched
commercial version
of MDBS and DQCS

The Team

With over 30 years experience, our staffs offer a unique blend of expertise as solution providers and consultants. We've been told this combination of talents uniquely supports our clients' needs, but we believe our hands on experience and knowledge of building systems are the foundation for the specialized services we offer.

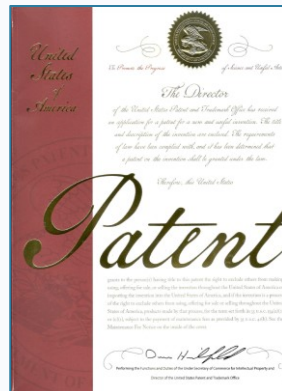
We have four teams for specialized in each business area.

- Software Development – Developing Commercial and Inhouse Solution
- DT Solution & Consulting – Innovating Project Collaboration and Business Process
- Engineering Services – Building Intelligent Schematic Drawing and Database
- R&D – Leading Research & Development and Product Strategy

“We are committed to enhancing value for our customers and partners as a DX business experts with global perspective. We hope that the innovative ideas and solutions we propose in the fields of engineering and O&M will contribute to the development of the industry.” - Siyeon Cho, President & CEO -



Certifications / Patents



Customers / Partners

PlantAsset Works with:



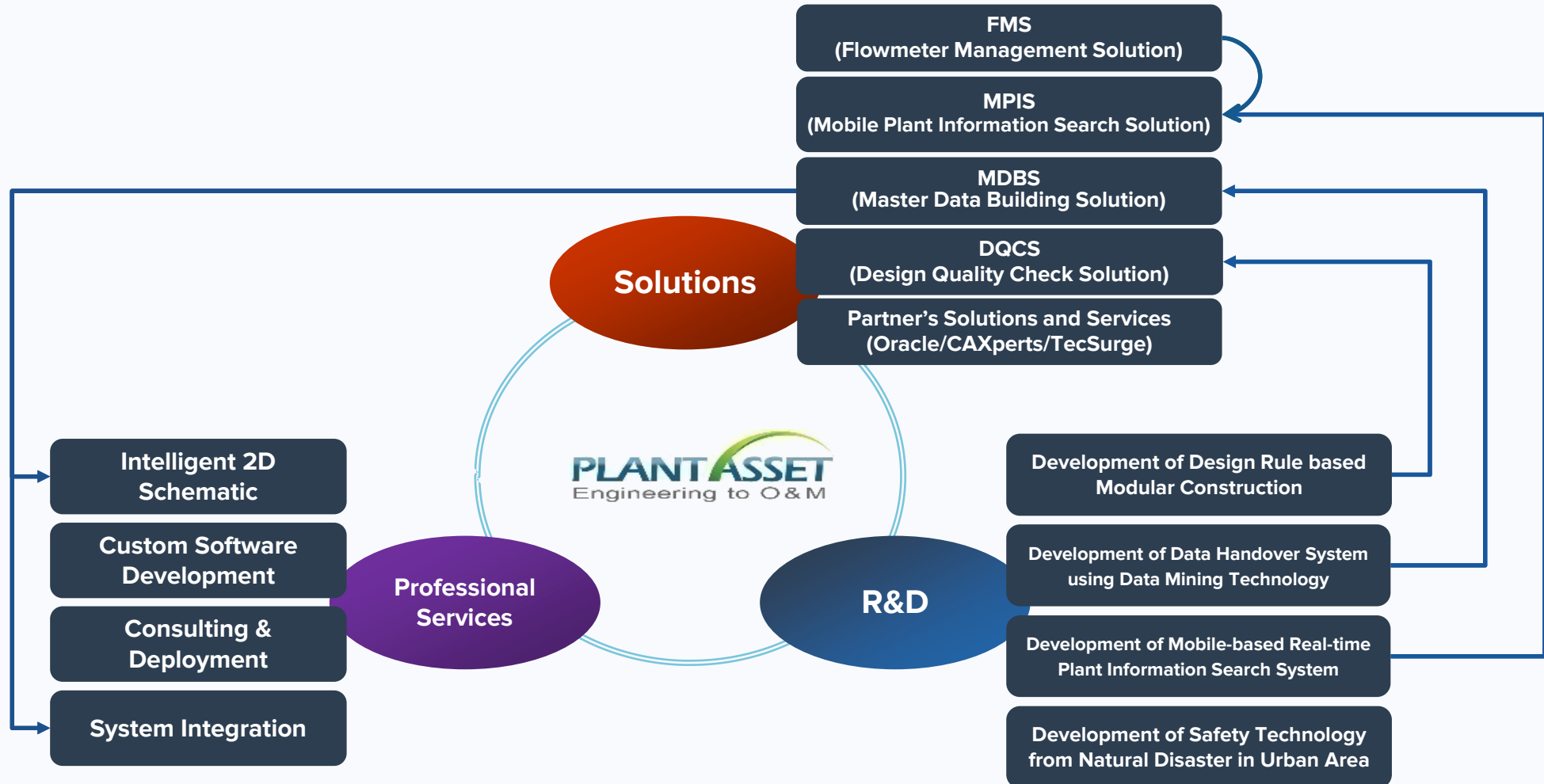
Our customers work with:



Geographical Reach / Project Locations



Business Area



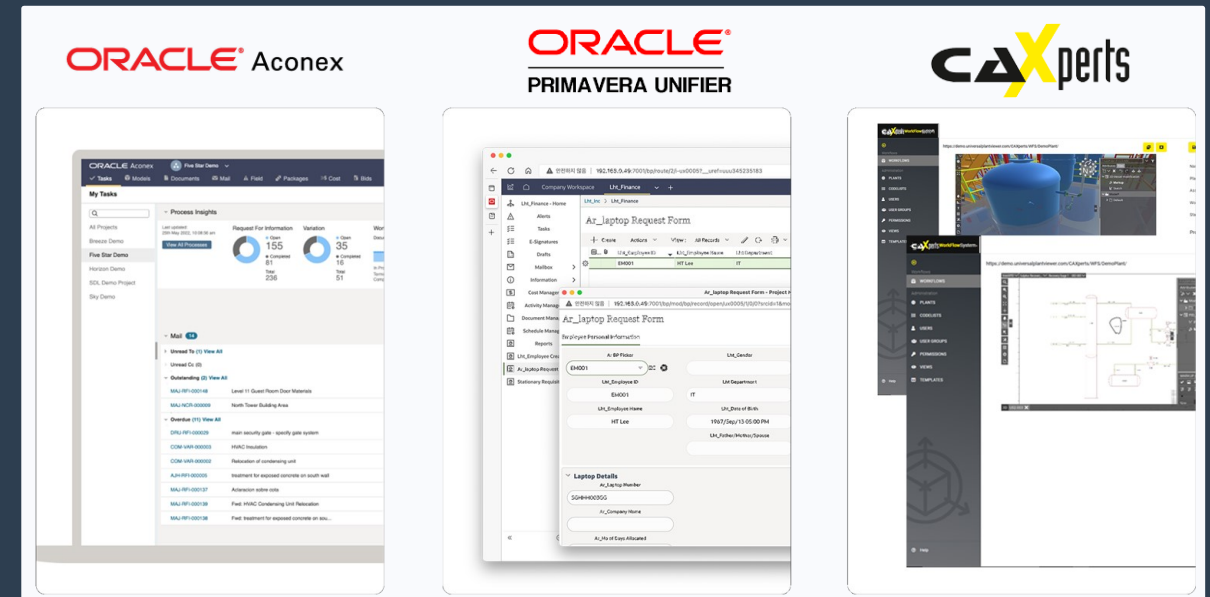
R&D Projects

- Actively involved in Government R&D projects to develop industry oriented innovative solutions
- Focusing on rule based intelligent, integration & interoperability approach for ultimately “Connected Plant Asset Lifecycle Management”

Department	MOTIE (Ministry of Trade, Industry and Energy)			MOLIT (Ministry of Land, Infrastructure and Transport)	
Project Name	Key technology development for plant industry		Key DX technology development for Marine	Concurrent collaboration support technology development	
R&D Subject	Development of sensor-based virtual plant engineering technology for the support of plant O&M	Development of mobile based real time intelligent P&ID search system for effective plant operation and maintenance	Development of Consistency Verification Technology for Marine Outfitting Design Based on Digitalized Knowledge	[Part 1] Development of a integrated collaboration management system for modular project	[Part 3] Development of a collaborative modular knowledge based system and a construction data valuation system
Managing By	Korea Evaluation Institute of Industrial Technology			Korea Agency for Infrastructure Technology Advancement	
Leading By	Korea Advanced Institute of Science and Technology (KAIST)	PlantAsset Technology	PlantAsset Technology	Korea Advanced Institute of Science and Technology (KAIST)	PlantAsset Technology
Consortium Partners	PlantAsset , SNU, KNU, Aid Corp., Ptolemy System and Hyundai Oilbank	YONSEI University, G-Pem Engineers	Institute for Advanced Engineering (IAE), Inha Technical College(ITC), Marine Tech-in, FESDEC, Hyundai Samho Heavy	PlantAsset , KOREATECH and HKCMC Co.	KAIST, YONSEI Univ., Institute for Advanced Engineering (IAE), Inha Univ. and Pields Engineering
Duration	JUN-2014 – MAY-2018 (4 Years)	OCT-2017 – DEC-2019 (2 Years 3 Months)	SEP-2023 – DEC-2027 (4 Years 4 Months)	DEC-2014 – DEC-2019 (5 Years)	AUG-2015 – DEC-2019 (4 Years 4 Months)
Total Budget (thousand KRW)	5,889,784 (approx. 5.2M USD)	2,010,057 (approx. 1.8M USD)	6,950,000 (approx. 5.3M USD)	5,785,975 (approx. 5.1M USD)	5,976,650 (approx. 5.3M USD)

Partnerships

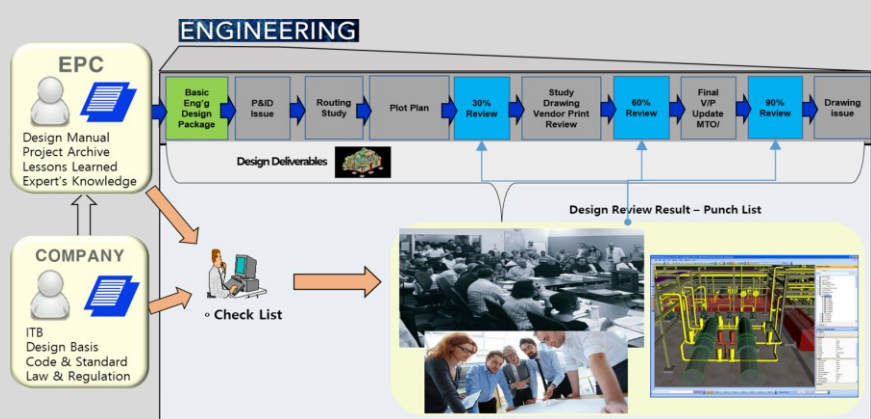
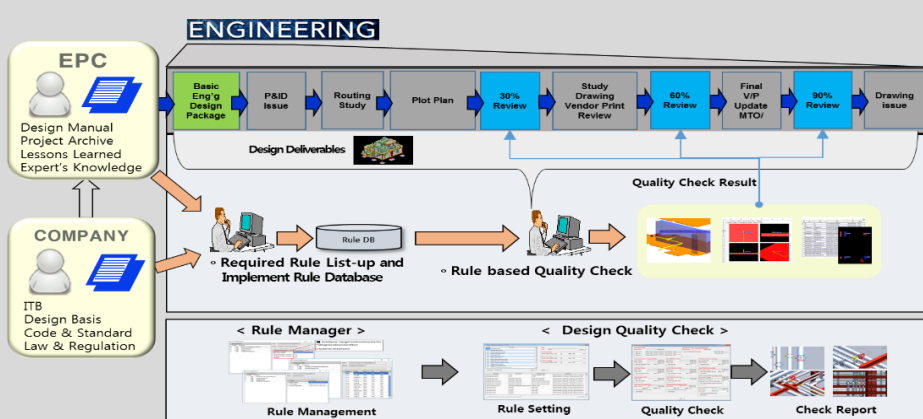
- In addition to having our own innovative commercial software solutions, we continue to collaborate with industry-leading solution and service providers such as Oracle, CAXperts, TecSurge, Hexagon ALI, AVEVA, Autodesk, and Bentley as partners and customers.
- These collaborations provide us with insights into what customers value in the global marketplace and inspire our actions in the digital transformation age. We are also dedicated to helping our clients secure the right solutions and integrate a data-first approach to unlock its value.
- In this regard, we offer not only professional services for Project Collaboration, Design Automation, Digital Twin, BIM, EDMS, and Business Process Innovation, but also integration between commercial solutions, bespoke software development, and some engineering services.



Key Solutions

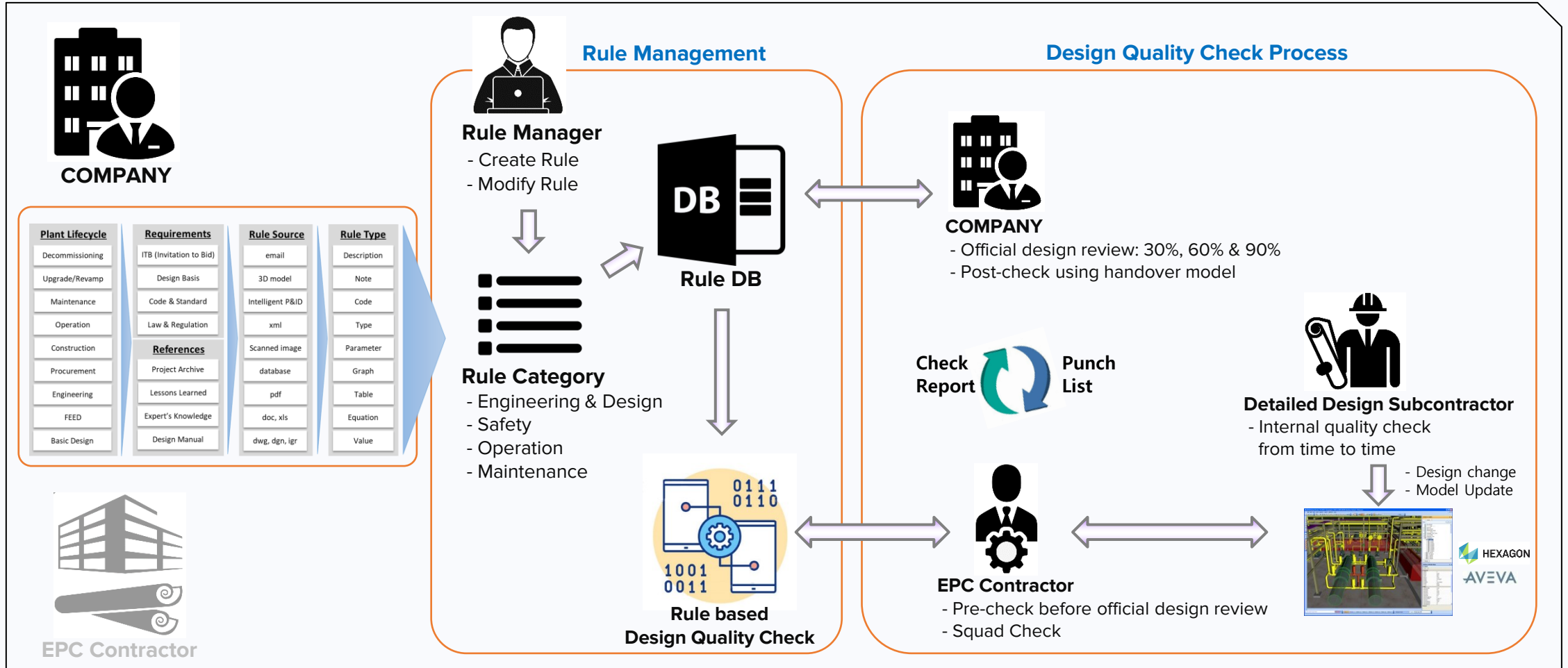
NO.	SOLUTION	DESCRIPTION
1	DQCS: Design Quality Check Solution	DQCS is an innovative solution for checking Design Quality by pre-defined design rules and values based on 3D Plant Model. The main purpose of the DQCS is to improve design quality through an automated check process based on the COMPANY and/or EPC's design rules to prevent re-work on the construction site and to eliminate potential operational accessibility, maintainability, safety and hazardous issues in advance. So it is particularly recommended that design rule check always be performed prior to generating and issuing deliverables, in order to keep projects on time and within budget.
2	MDBS: Master Data Building Solution	MDBS offers a 'data mining' solution with a difference, in that it's aimed at technical contents including various forms and tables for key information to be exported into whichever program you're using such as EDW(Engineering Data Warehouse), CMMS(Computerized Maintenance Management System) and ERP. This could make it especially useful for enterprises with a large number of technical contents such as Data Sheet, Vendor Print and various Authoring Tools, especially coming from contractors and suppliers, which may often be in PDF format.
3	FMS: Flowmeter Management Solution	The importance of systematic management of flowmeters has been increasing to improve accuracy in sectors that use flow information, such as mass balance, intercompany transaction, emission trading, etc. because of the nature of the plant industry such as refinery, petrochemical and energy plant. FMS makes it possible to unify information, manage change records, use accurate and consistent flow calibration method and calculate the amount of process operation by building an integrated flowmeter database and managing it systematically.

Key Solutions – DQCS(Design Quality Check Solution)

Background	With the progress of Digital Transformation and the increase of on-line work due to pandemic, the demand for SYSTEM, DATA and RULE based design quality verification increases	
Key Features	<ul style="list-style-type: none"> Check and validate design, safety & hazardous, operational accessibility and maintainability by pre-defined rules Generate log and report automatically from quality check result 	
Benefits	<ul style="list-style-type: none"> Checking design quality by system from time to time, daily, weekly, monthly... Checking design quality as well as safety, operability and maintainability for O&M Find a quick solution for non-compliance with design criteria and human errors Share check reports across the disciplines and/or between COMPANY and EPC contractors Enables efficient and powerful quality control collaboration in a non-face-to-face (on-line) environments Reduction of re-work in the fabrication/installation/construction phase more than 15% Reduction of claim through rule based rigorous quality control from the engineering stage, and efficient use of data, documents, drawings and models 	
Goals	<ul style="list-style-type: none"> Design quality improvement and better communication Reduce on-site rework to ultimately optimize Project Cost and Schedule Positive impact on ESG management 	
Work Process (AS-IS/TO-BE)	<p style="text-align: center;">AS-IS</p>  <p>The AS-IS diagram shows a linear process flow for 'ENGINEERING' design deliverables: Basic Eng'g Design Package → P&ID Issue → Routing Study → Plot Plan → 30% Review → Study Drawing Vendor Print Review → 60% Review → Final V/P Update MTO/ → 90% Review → Drawing Issue. It also shows inputs from 'EPC' (Design Manual, Project Archive, Lessons Learned, Expert's Knowledge) and 'COMPANY' (ITB Design Basis, Code & Standard, Law & Regulation) feeding into a 'Check List' which is then used for a manual 'Design Review Result - Punch List'.</p>	<p style="text-align: center;">TO-BE</p>  <p>The TO-BE diagram shows a similar linear process flow for 'ENGINEERING' design deliverables. However, it introduces a 'Rule DB' (Rule Database) and a 'Rule based Quality Check' step. Inputs from 'EPC' and 'COMPANY' (ITB Design Basis, Code & Standard, Law & Regulation) feed into a 'Rule Manager' which manages rules. The 'Rule Manager' leads to 'Rule Setting', which then feeds into the 'Quality Check' step, resulting in a 'Quality Check Result' and a 'Check Report'.</p>

Key Solutions – DQCS(Design Quality Check Solution)

- DQCS, patented solution enables the highest design quality and productivity
- Frequent quality check based on the design guidelines of the COMPANY




Key Solutions – MDBS(Master Data Building Solution)

Background	With the progress of digital transformation, the importance of data is emphasized, and the demand for improvement of traditional business processes centered on documents/drawings increases	
Key Features	<ul style="list-style-type: none"> ● Extract accurate data from various documents and drawings such as Data Sheet, Vendor Print, P&ID using data mining technology ● Help to build high-quality CMMS master database for O&M and EDW for EPC more efficiently and accurately 	
Benefits	<ul style="list-style-type: none"> ● Improve data accuracy and reliability <ul style="list-style-type: none"> ▪ Apply data mining and learning techniques to ensure data accuracy by reducing manual human errors ▪ Increase productivity and efficiency due to accurate and complete EDW/CMMS master data generation ● Easy and simple operation <ul style="list-style-type: none"> ▪ Increased convenience with an intuitive user interface ● Increase cost competitiveness and period shortened by reducing database deployment costs 	
Goals	<ul style="list-style-type: none"> ● Pursuing data-driven business innovation that is the foundation of Digital Transformation ● Maintain consistency from Engineering to O&M stages of data not generated by integrated authoring tools incl. Hexagon, AVEVA 	
Work Process (AS-IS/TO-BE)	AS-IS	TO-BE
	<p>The AS-IS diagram illustrates a manual data building process. On the left, 'EPC/CONTRACTOR' provides 'Data Sheet', 'Vendor Print', and 'Design Tools'. 'COMPANY/CLIENT' provides 'Class, Characteristic'. These inputs feed into a 'Manual Input' box. The 'Manual Input' box connects to an 'EDW (Engineering Data Warehouse)' and a 'Handover Database'. The 'EDW' connects to 'Master Data Publishing', which then feeds into the 'Handover Database'. The 'Handover Database' connects to 'Loading' boxes, which feed into a 'CMMS DB' (containing SAP, MAXIMO, SPF, AVEVA NET, etc.). A 'Templates Excel' box also feeds into the 'Loading' boxes. The entire process is labeled 'Master Data Building by Manual Input'.</p>	<p>The TO-BE diagram illustrates an automated data building process using the 'MDBS (Master Data Building Solution)'. On the left, 'EPC/CONTRACTOR' provides 'Data Sheet', 'Vendor Print', and 'Design Tools'. 'COMPANY/CLIENT' provides 'Class, Characteristic'. These inputs feed into the 'MDBS' box. The 'MDBS' box includes an 'Extraction' step (Excel Publishing, PDF Publishing, Design Tools Publishing) and an 'ISO15926 Confirmation' step. The 'Extraction' step feeds into a 'Consolidated Database'. The 'Consolidated Database' connects to 'Master Data Publishing', which feeds into an 'EDW (Engineering Data Warehouse)'. The 'EDW' connects to 'Loading' boxes, which feed into a 'CMMS DB' (containing SAP, MAXIMO, SPF, AVEVA NET, etc.). A 'Templates Excel' box also feeds into the 'Loading' boxes. The entire process is labeled 'Master Data Building by Manual Input'.</p>

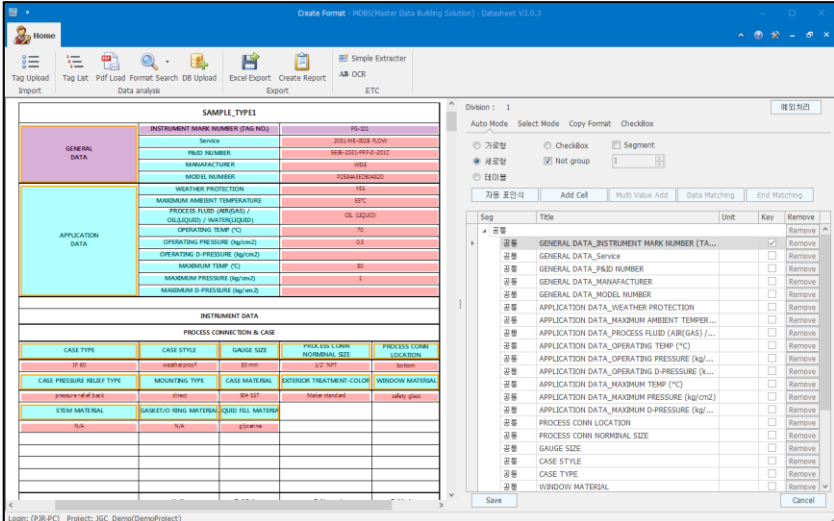
Key Solutions – MDBS(Master Data Building Solution)

- Export mined data to MS Excel template and/or external database

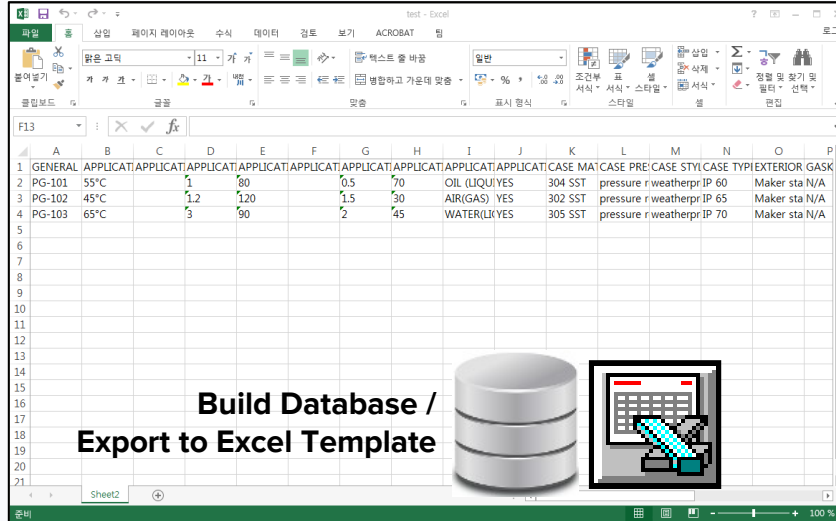
[Source]



[Mining / Recognition]

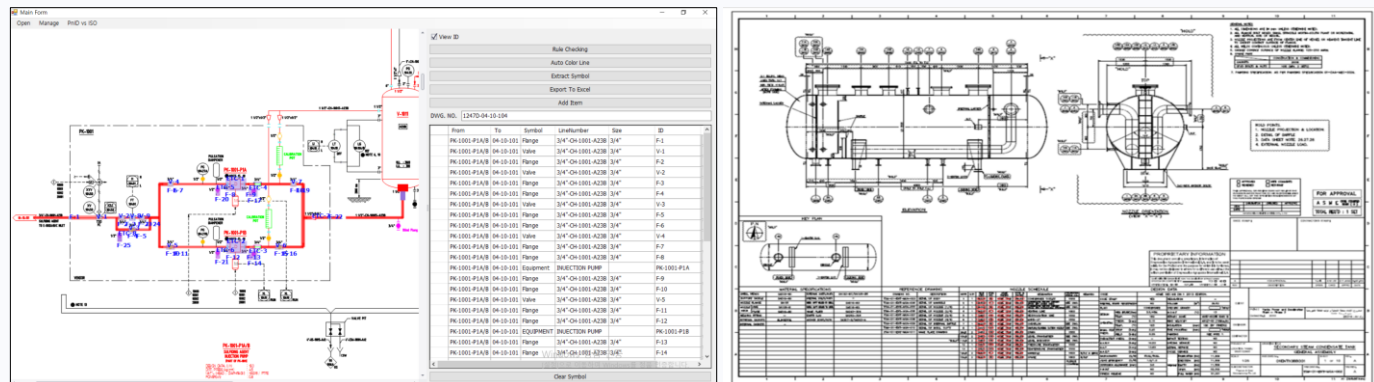


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- Modules

- 1) MDBS Core(Data Sheet)
- 2) MDBS P&ID
- 3) MDBS Vendor Print
- 4) MDBS Plot Plan

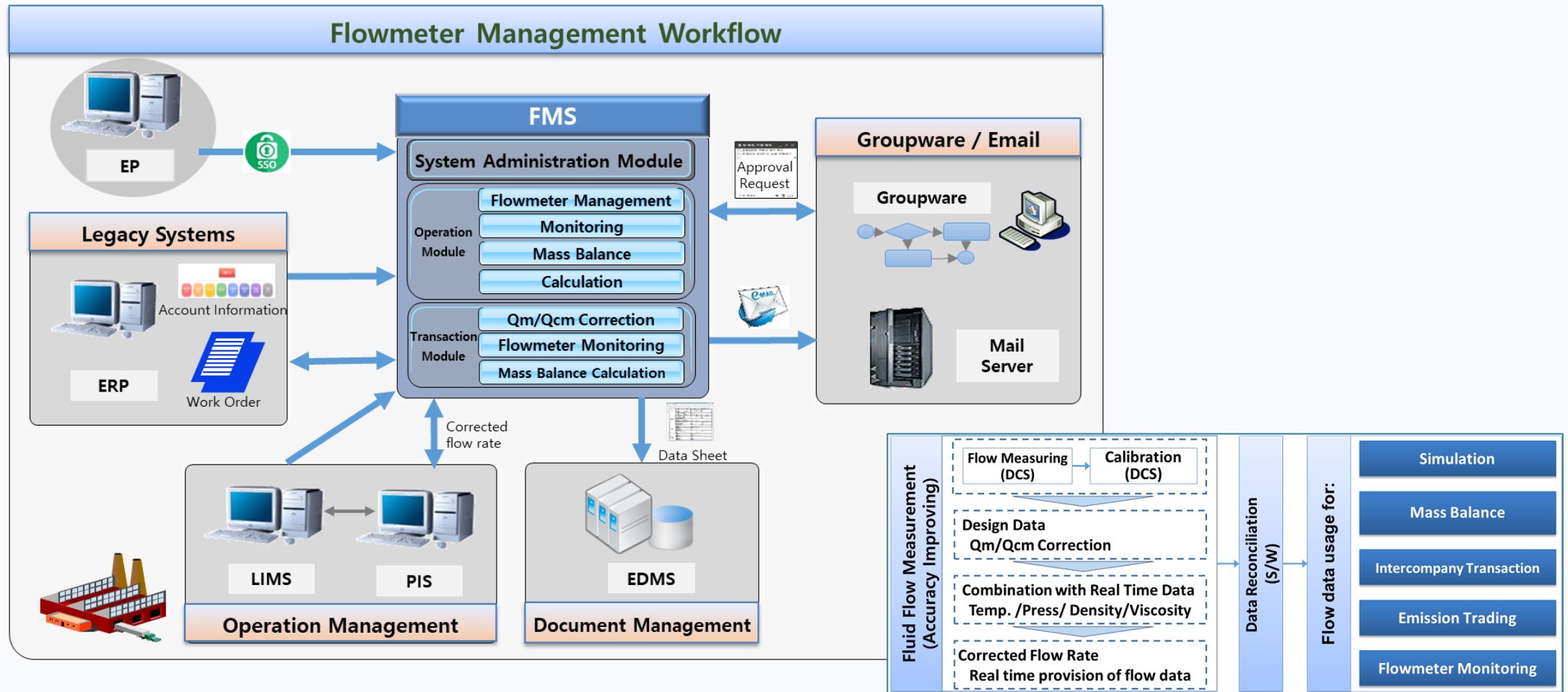


Key Solutions – FMS(Flowmeter Management Solution)

Background	The demand for mass imbalance improvement through better flow measurement accuracy and data reconciliation in terms of process optimization increases	
Key Features	<ul style="list-style-type: none"> ● Flowmeter register / Revise/ History management ● Systemize the change procedure of flowmeter range ● Monitoring / Range change recommendation / Alarm ● Unified mass balance calculation 	
Benefits	<ul style="list-style-type: none"> ● Improve flow measurement accuracy ● Corrected flow information can be used for mass balance calculation, intercompany transaction, emission trading, etc. ● Block the disconnection and absence of change history of the flowmeter ● Increase reliability of APC(Advanced Process Control) and RTO(Real Time Optimization) 	
Goals	<ul style="list-style-type: none"> ● Improve operation efficiency through integrated flowmeter management system ● Improve financial results through mass imbalance reduction 	
Work Process (AS-IS/TO-BE)	AS-IS	TO-BE
	<p>The AS-IS diagram shows a vertical stack of five yellow boxes. The top box is titled 'Working in silos'. The subsequent boxes contain the following text: 'Flowmeter information has been fragmented by several teams', 'No flowmeter change and calibration records', 'Inconsistent flow calibration method', and 'Use different unit balance calculation methods by team or process unit'.</p>	<p>The TO-BE diagram illustrates an 'Integrated collaboration system - FMS'. At the top is a red header bar. Below it are four white boxes: 'Management', 'Mass Balance', 'Monitoring', and 'Calculation'. These are connected by double-headed vertical arrows to a row of five boxes: 'SSO', 'API Connect', 'XML / HTML', 'DB Connect', and 'API / SDK'. Each of these boxes is further connected by a double-headed vertical arrow to a corresponding icon and label below: 'SSO' (Portal icon), 'API' (ERP icon), 'XML / HTML' (XML/HTML icon), 'DB Connect' (Database icon), and 'API / SDK' (API icon). At the bottom, a grey bar labeled 'Interface with Legacy Systems' contains a row of boxes: 'Portal', 'ERP', 'Groupware', 'EDMS', 'LIMS', 'PIS(RTDB)', 'E-Mail', and 'ETC.'.</p>

Key Solutions – FMS(Flowmeter Management Solution)

- Systematic flowmeter management through interface with various legacy systems



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