



ARTIFICIAL INTELLIGENCE FOR THE PROCESS INDUSTRY

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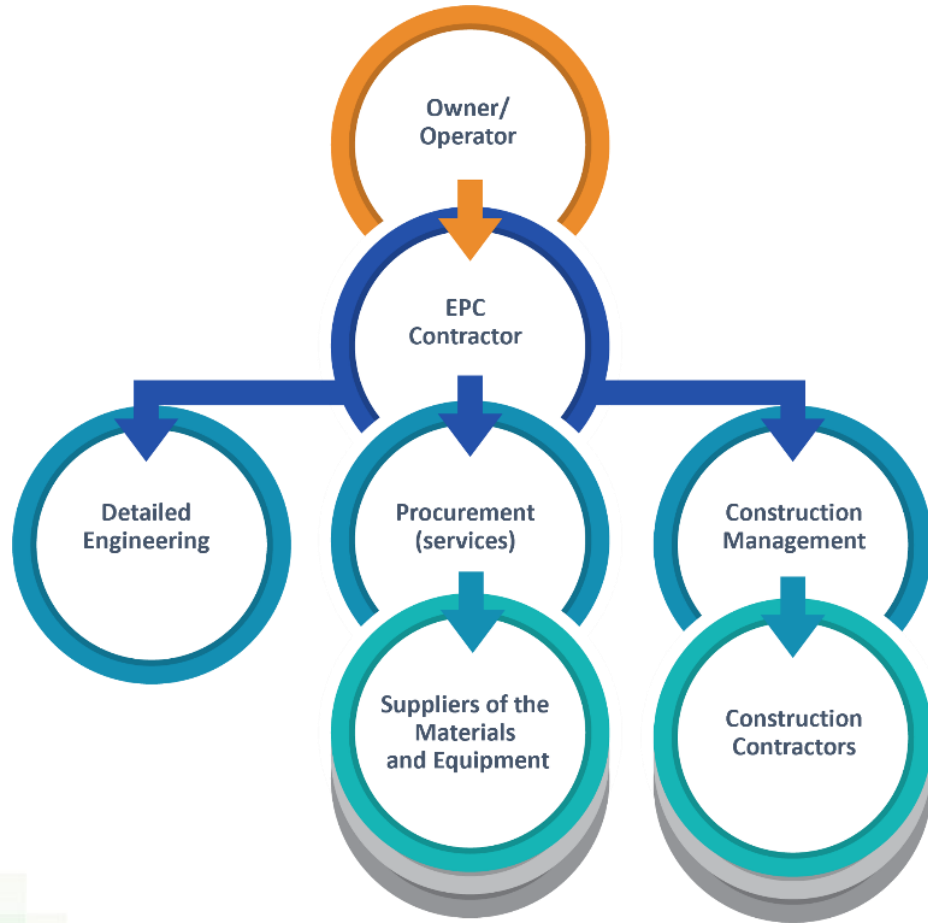
Sr. Manager, Artificial Intelligence Initiatives lead,
McDermott

NAP conference, November 21st, 2024





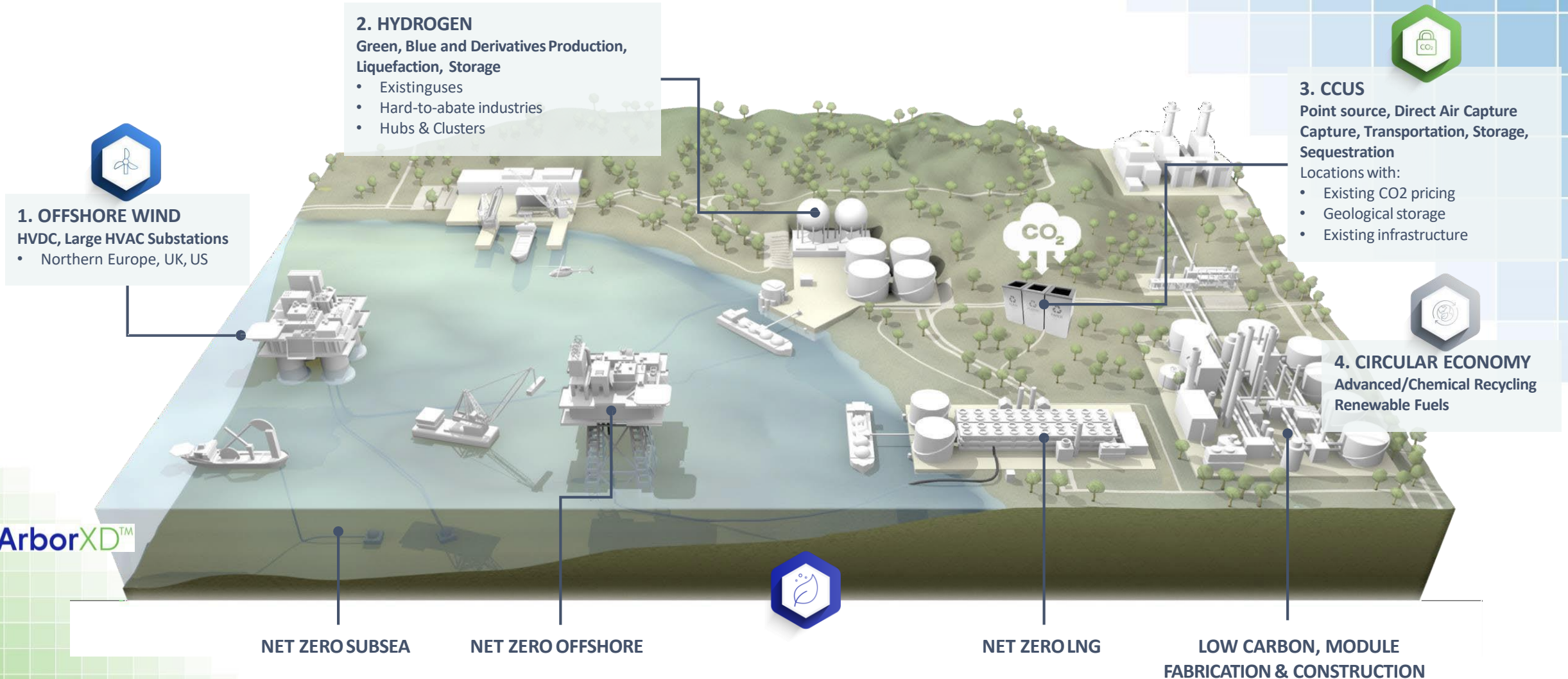
WHAT IS THE ENGINEERING, PROCUREMENT, AND CONSTRUCTION (EPC) SECTOR?



- Serves large-scale projects such as energy plants, refineries, and infrastructure
- Manages complex projects, involving multiple disciplines and strict regulations
- Large EPC projects have capital costs exceeding USD 500 million and take years to complete



McDERMOTT SCOPE IN ENERGY TRANSITION





AI IN EPC

- Common AI-Driven Techniques applied nowadays within EPC
 - **GenAI:** Automates document reviews and extracts key information
 - **Computer Vision:** Enhances quality control through information extraction from engineering drawings
 - **Data analysis and forecasting:** procurement and expenditure monitoring and continuous optimization



TO AUTOMATE THE
REPETITIVE JOB



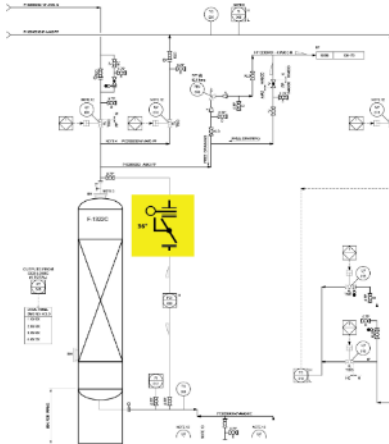
TO DEVELOP THE TAILOR-
MADE SOLUTIONS



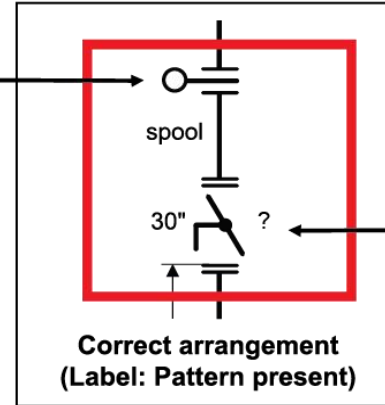
TO REINFORCE
ENGINEERING DESIGN



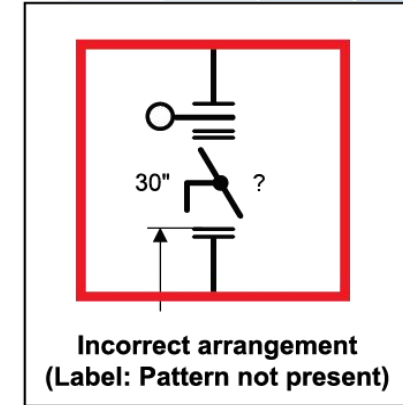
AI APPLICATIONS IN EPC – FINDING DESIGN ERRORS IN ENGINEERING DRAWINGS



blind



butterfly valve

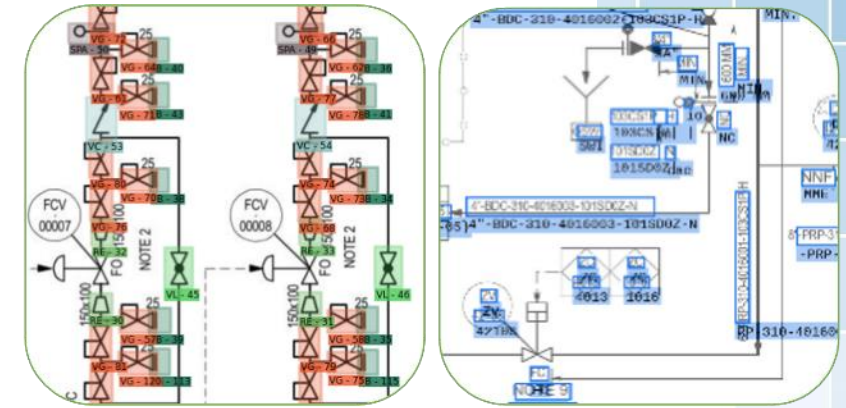
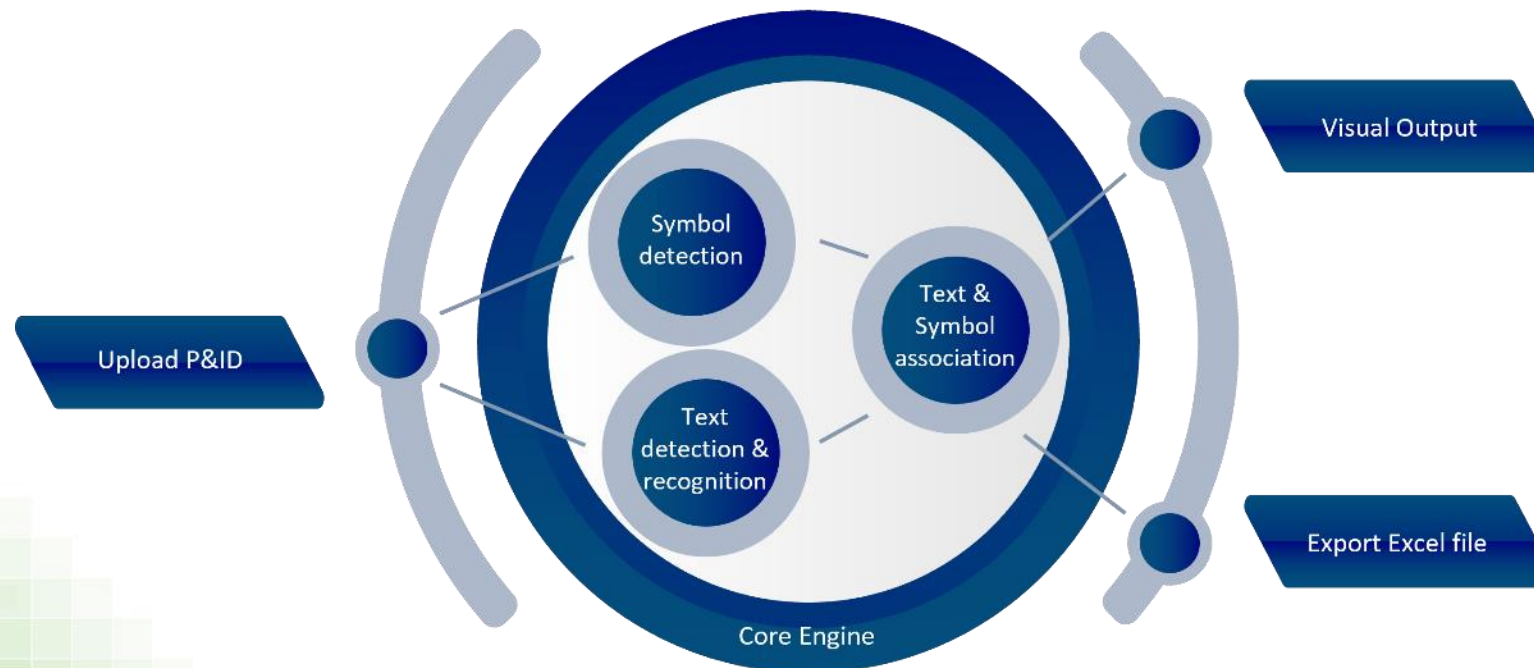


Description:	Incorrect:		Correct:
(Flow direction)	←	→	
With bypass			
Without bypass			





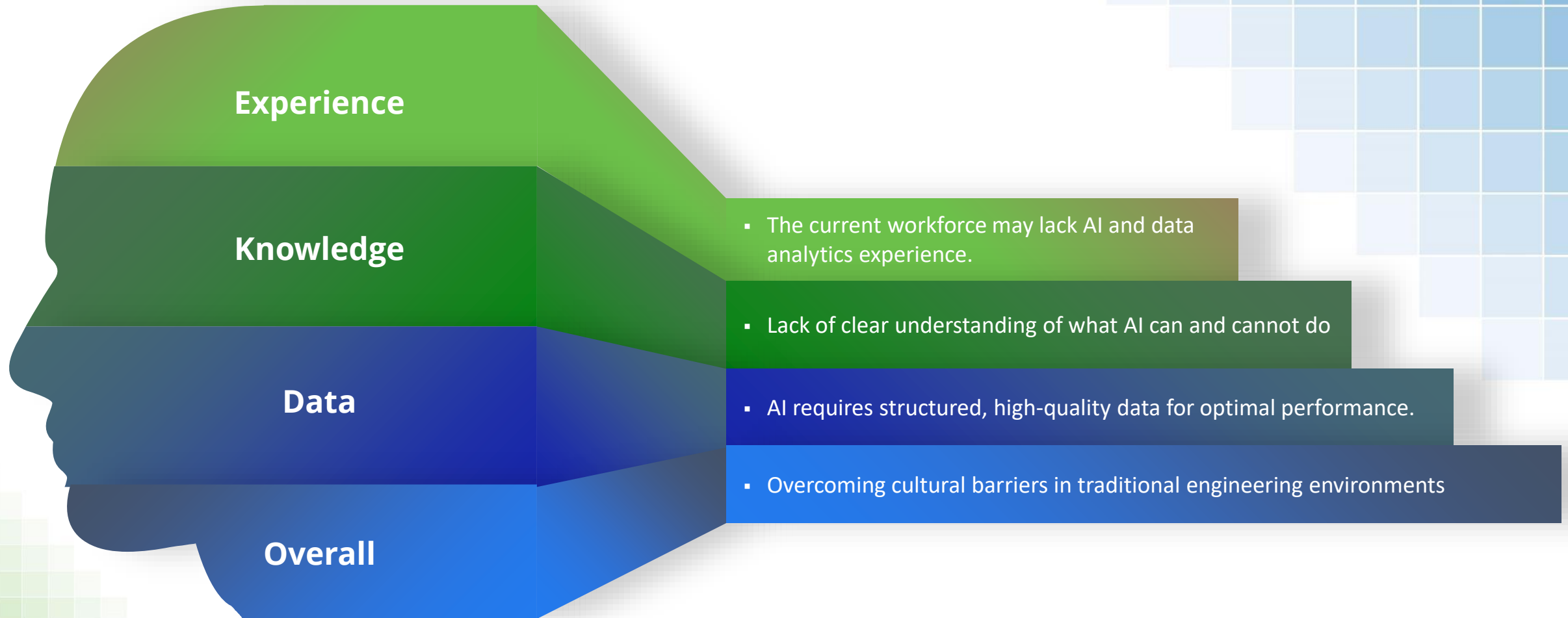
AI APPLICATIONS IN EPC – INFORMATION EXTRACTION FROM ENGINEERING DRAWINGS



A	B	C	D	E	F	G	H	I
Filename	page	Index	code	Id	Function	Instrument Type Description	Assumed I/O Types	Assumed Location
Tilenga-3	1	1 PG	0011B		PRESSURE	PRESSURE GAUGE	N/A	FIELD / LP-FIELD
Tilenga-3	1	2 FT	108		FLOW	FLOW TRANSMITTER	AI	FIELD
Tilenga-3	1	3 FT	0011B		FLOW	FLOW TRANSMITTER	AI	FIELD
Tilenga-3	1	6 PI	0012B		PRESSURE	LOCAL PRESSURE INDICATOR	AO	FIELD / LP-FIELD
Tilenga-3	1	7 FI	0010B		FLOW	LOCAL FLOW INDICATOR FLOW	AO	FIELD / LP-FIELD
Tilenga-3	1	4 PT	0012B		PRESSURE	PRESSURE TRANSMITTER	AI	FIELD
Tilenga-3	1	5 FE	0011B		FLOW	FLOW ELEMENT	N/A	FIELD
Tilenga-3	2	1 PG	0011C		PRESSURE	PRESSURE GAUGE	N/A	FIELD / LP-FIELD
Tilenga-3	2	2 FT	0011C		FLOW	FLOW TRANSMITTER	AI	FIELD
Tilenga-3	2	3 FT	0010C		FLOW	FLOW TRANSMITTER	AI	FIELD



CHALLENGES IN ADOPTING AI SKILLS





Thank you