Capgemini

IIF
INTELLIGENT INSPECTION FRAMEWORK

Gate Review – January 20, 2023

AGENDA

- Team Introduction (Jess) 5 min
- Executive Summary (Auro) 5 min
- Overview and Vision (George) 8 min
- Demonstration (Team) 25 min
- Project Phases Status (Kabilan) 5 min
- Budget Review (Jess) 5 min
- What Is Next (Jess) 5 min
- Q&A 15 min

IIF TEAM

Kabilan
Product Manager

Sandip
Data Scientist

Saranya
ML Engineer

Akash Dey
Microservices Engineer

Sai Mounika
ML / Test Engineer

Sakare Monika
Cloud Platform Engineer

Mukund
Data Scientist

Hardik
Data Engineer

Ritesh
UI/UX Engineer

George
IIF-Lead

Jess
Product Owner

Aurobindo
Chief Mentor & Governance

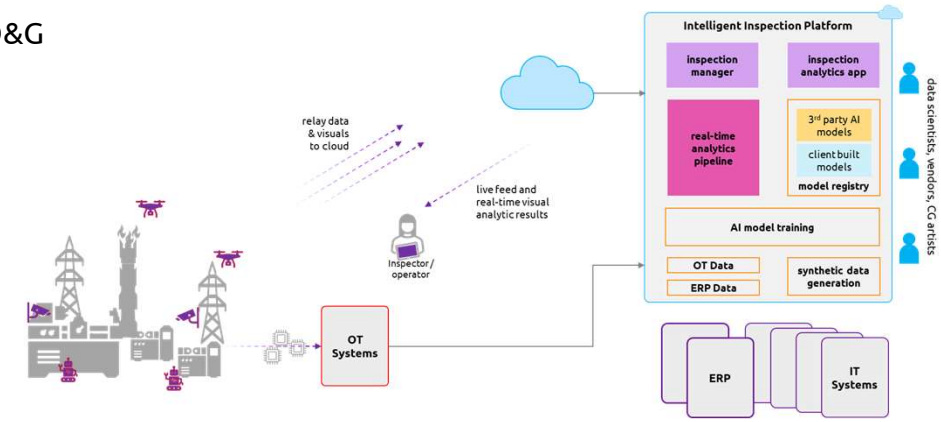
EXECUTIVE SUMMARY

With collaboration & sponsorship from the EUC market unit, Insights & Data worked on building a computer vision framework solution that will help to inspect assets in factories and refineries using AI ML computer vision-enabled techniques.

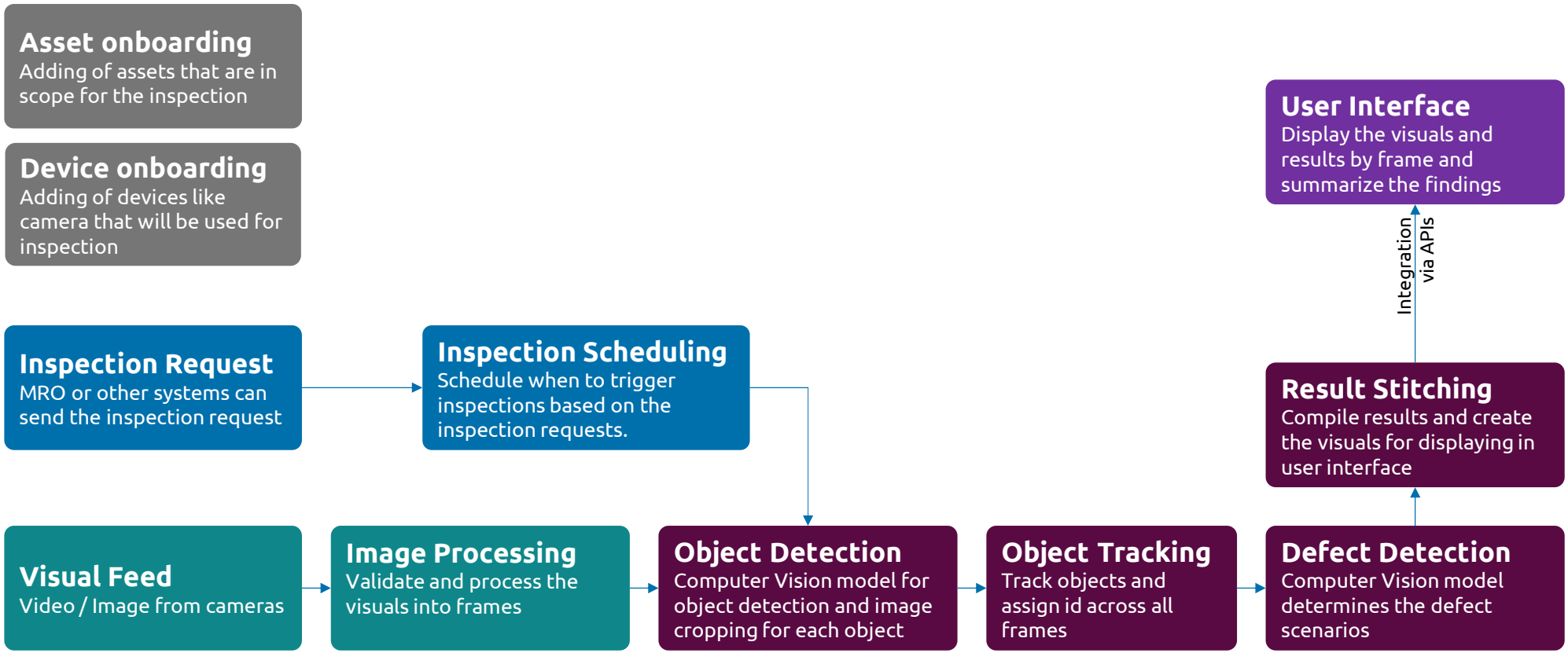
In the last 5 months, a team of about 12 people built an asset named **Intelligent Inspection Framework** for the EUC sector. Today we will demo a use case on how an inspection request can leverage Computer Vision, AI & Machine Learning for **detecting cracks near flare tips**.

Current Status
Phase 1 & 2 work is completed
The **framework & its demo is available** to showcase within Capgemini & to O&G clients.

We are talking to clients such as **ExxonMobil**, **ChampionX**, **Totalenergy** and **Chevron** who have shown a lot of interest in this solution.



IIF OVERVIEW



DEMONSTRATION

IIF 2022 STATUS – PHASE 1 & 2

Category	Feature	Description	Status
Infrastructure	Infrastructure	Cloud Infrastructure Set-up and Automation (IaC)	Completed
Architecture	Phase 1 & 2 Design	Phase 1 Solution Architecture and Design	Completed
Build	Inspection Request	Pipeline to process the Inspection Requests	Completed
Build	Device and Asset onboarding	Map the Videos and Images with the respective Device id or Asset id	Completed
Build	Visual Image processing	Pipeline to convert input Videos into Frames	Completed
Build	Inspection Scheduling	Pipeline for setting-up Triggers for each inspection	Completed
Build	Defect Detection (Computer Vision)	Pipeline for defect classification - Scoring	Completed
Build	Backend-UI integration	Integration of API Microservices with User Interface	Completed
Build	User Interface	User Interface for Displaying the video and defect results	Completed

IIF 2023 PLAN

Category	Feature	Description
Architecture	Phase 3 Design	Migration to Azure Kubernetes Service based Architecture
Metaverse	Synthetic Data	Organizing Synthetic Data – Video/ Images
New Development	MRO & Work Order	Integration of MRO (Inspection Request & Result) and Work Order
New Development	Asset Hierarchical Modeling	Development of Asset based Hierarchical Models
Enhancement	Image processing	Contrast, Exposure adjustment, Grey scale, B&W, Image Streaming and Improved UI/UX
Enhancement	Model Re-Training	Pipeline for Re-Training (Synthetic or Real Visual Data)
Support	Application Support	Support and Maintain the existing IIF Framework
Go to Market	Business opportunity	Identify potential clients and showcase it

PROJECT BUDGET AND GTM PLAN

IIF Budget – August to December 2022

- Planned: 7 Full Time Developers + 1 Full Time Manager (Offshore)
  $349,903 Estimated Cost

- Actual: 4 Full Time Developers + 6 Part Time Developers + Part Time Manager (Offshore)
  $172, 630 Actual Oracle Account Cost

GTM Plan – 2023 (upcoming leadership discussion)

Customer	*Customer Contact*	*Capgemini AE*	*Demo Date*	*Use Case*	*Next Steps*
ExxonMobil	Shankar Nadarajah	Drake	March	Flare Tips	To Habib and Team
CPChem	Mason Jones	Duffy	January	Refinery	
P66	TBD by John	John Griebel			
Marathon		(Leslee Sheffield?)			
Dow Chemical		Vivek, Marcus, Jess			Dow contacts?
Chevron	Sean Beercroft (Tech Center)/Matthew Fahey (Product Line Manager)	Som Mahakul	December		Som?
HUVR	Matt Alberts	Drake		Partner	
BP		Jatinder Munjal			
Champion X		Cyrus Dsouza	1/11/2023		
Totalenergy					
SoCalGas	Anuj Babel (SAP)	Melanie Brown			
AspenTech SW	Ratheesh Kumar	Jess	1/10/2023	Partner	AT to review
TecK Resources (mining)		John Audia, Walker Sherk	1/25/2023		

WHAT IS NEXT?

- Patent Application in process through the Capgemini patent team
- Developing GTM Video in process to be on the Capgemini website
- IIF page will be on the Capgemini website
- January 30th leadership review of the next phase(s)
  - Development Team retention – support & development
  - Microsoft Azure subscription
  - Customer demonstrations to be scheduled with Account Executives
  - Address backlog items (code optimization & program enhancement)

Q & A