



How Digitalisation enhances Process Safety Management

Jurong Island Vision Zero (JIVZ)



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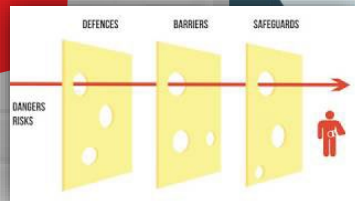
Let's not for

Pain-Points

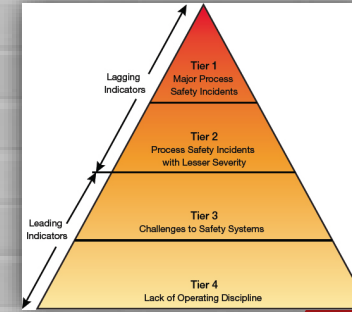
How can my stakeholders have easy access to **PS Information** and be well aware of the risks?



What are my **barriers** and are they in good health?



What is my current **performance**? Which specific area(s) to target for **improvement**?



How to **balance** risk management while striving to gain productivity?



Is there a **cost affordable** solution?



Golden Retriever Eco-System





MENU

Process Safety Performance

LOPC

9PSF

MOC

RADAR

Operational Status

TMAP

Temporary Hoses

Over-Ride

Interim Measures

REDCON

Deferral



Process Safety Apps

Process Safety Reference

Critical Equipment

Hazards Register

Critical Human Barriers

Safety Reviews

Generic Critical Activity

Safety Critical Events

Fire Safety Certificate

Atmospheric Relief Vent

Assurance

PSFO

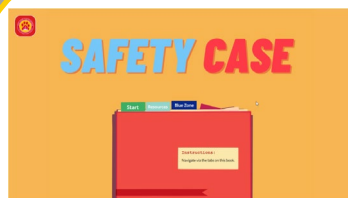
eMOC Training

Version 3.0- July 2022
Revision History

Visuals



Safety Case Training (PowerApps) –
Recurring F2F to Online

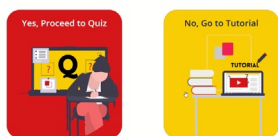


Customized training

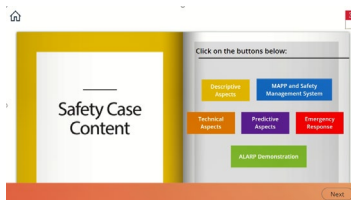


MS Stream - video on demand

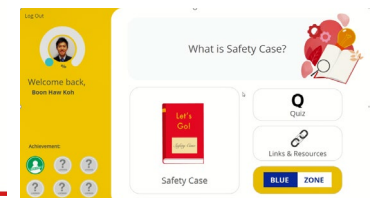
Test your knowledge!



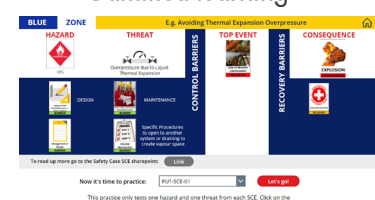
Quiz to test understanding



Bite size module



Gamified learning



Blue Zone –
Barrier thinking



Golden Retriever (PowerBI) – Provide Data
analytics / Common Operational Picture of
Plant performance and information

Performance



Cumulative risk based on health
status of Critical Equipment



MOC



ER REDCON

Reference



Critical Equipment Register



Fire Safety Certificate

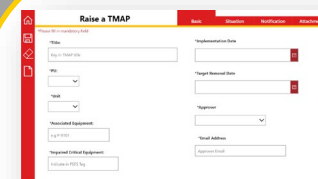


Safety Critical Events and PIP

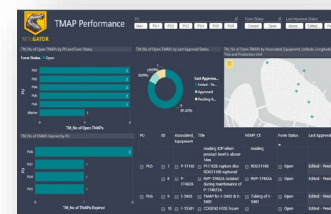


MITIGATOR
TMAP easily

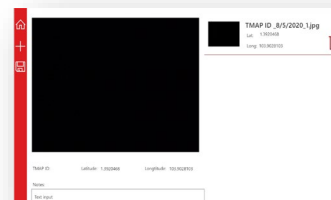
Mitigator (PowerApps) – Management of
Temporary Mitigation Action Plan. From
Paper to Digital Process



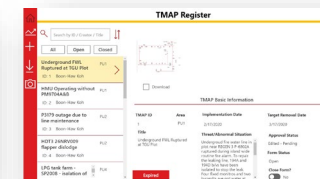
Structured Data Collection



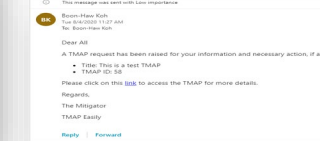
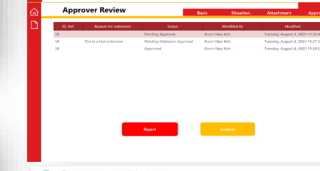
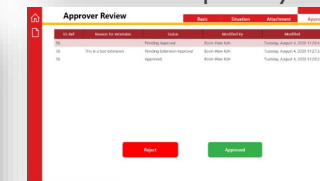
Business intelligence and analytics



Camera with geotagging



Centralised repository



Built-in approval / extension
and notification process

Visuals

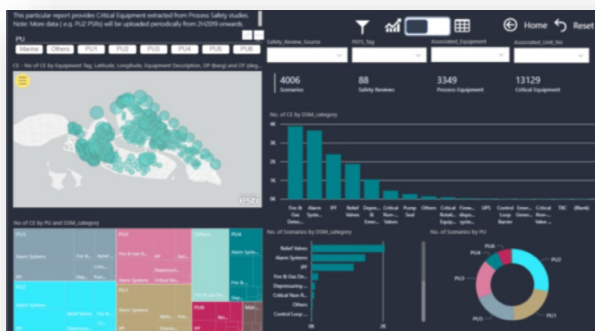


Golden Retriever (PowerBI) –

Performance



Cumulative risk based on health status of Critical Equipment



Critical Equipment Register



MOC



Safety Critical Events and PIP



ER REDCON

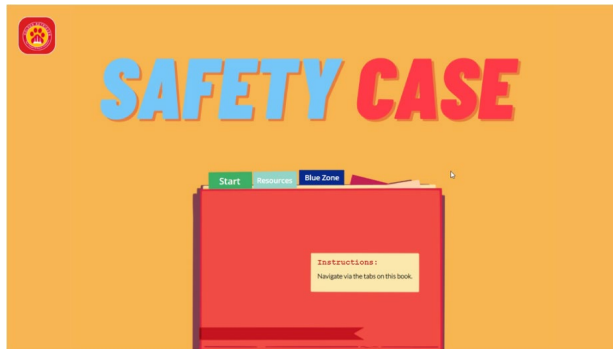


Fire Safety Certificate

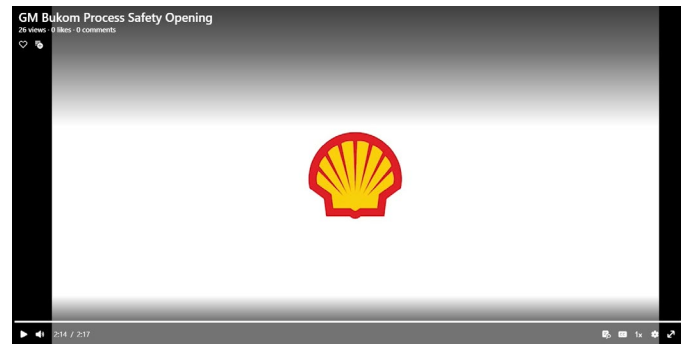
Visuals



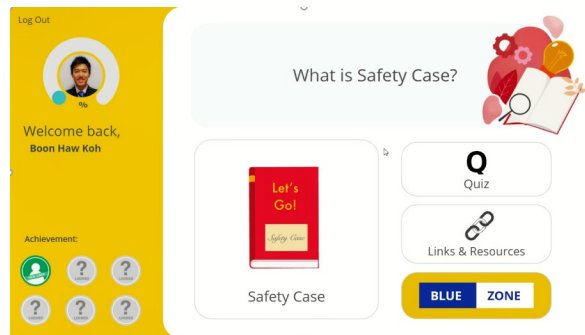
Safety Case Training (PowerApps) – Recurring F2F to Online



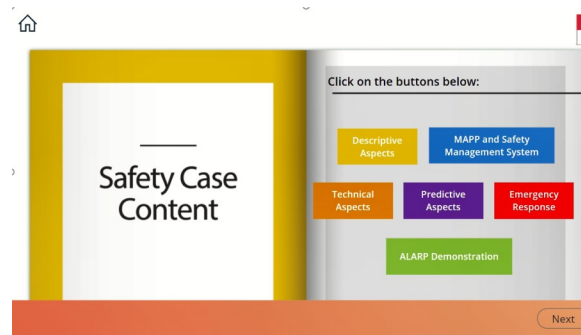
Customized training



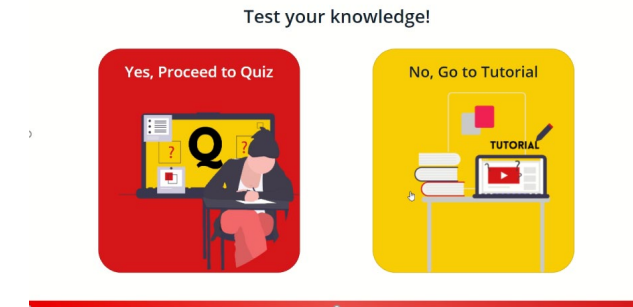
MS Stream – video on demand



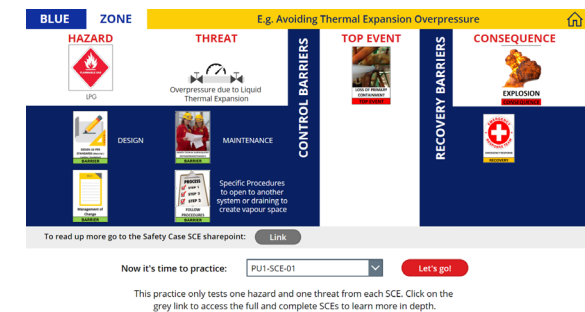
Gamified learning



Bite Size Module



Quiz to test understanding



Blue Zone – Barrier thinking

Visuals



Mitigator (PowerApps) – Management of Temporary Mitigation Action Plan.
From Paper to Digital Process. Integrated with Golden Retriever

Raise a TMAP

Basic Situation Notification Attachment

*Please fill in mandatory field

*Title:
Key in TMAP title

*Implementation Date

*PU:
▼

*Unit:
▼

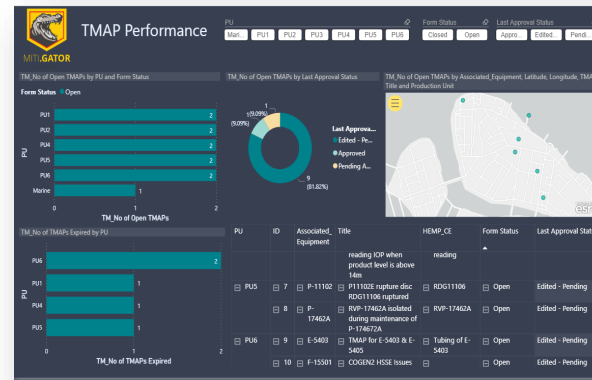
*Associated Equipment:
e.g P-9101

*Impaired Critical Equipment:
Indicate in PEPS Tag

*Target Removal Date

*Approver

*Email Address
Approver Email



Approver Review

Basic Situation Attachment Approval

ID Ref	Reason for extension	Status	Modified by	Modified
58	This is a test extension	Pending Approval	Boon-Haw Koh	Tuesday, August 4, 2020 11:25:4...
58	This is a test extension	Pending Extension Approval	Boon-Haw Koh	Tuesday, August 4, 2020 11:27:3...
58	This is a test extension	Approved	Boon-Haw Koh	Tuesday, August 4, 2020 11:28:2...

Reject Approved

Structured Data Collection

TMAP Register

Search by ID / Creator / Title

All Open Closed

ID	Title	Area	Implementation Date	Target Removal Date
Underground FWL Ruptured at TGU Plot	PU1			
ID: 1 Boon-Haw Koh				
HMU Operating without PM9704A&B	PU1			
ID: 2 Boon-Haw Koh				
P3179 outage due to line maintenance	PU2			
ID: 3 Boon-Haw Koh				
HD73 26NRV009 flapper dislodge	PU2			
ID: 4 Boon-Haw Koh				
LPG tank farm - SP2008 - isolation of	PU4			

Download

TMAP Basic Information

TMAP ID: 1 Area: PU1 Implementation Date: 2/17/2020 Target Removal Date: 3/17/2020

Title: Underground FWL Ruptured at TGU Plot

Threat/Abnormal Situation: Underground fire water line in plot near RG201 3 P-5802A ruptured during island wide routine fire alarm. To repair the leaking line, 194A and 194D have been isolated to stop the leak. Four fixed monitors and two handhelds are not water at

Approval Status: Edited - Pending

Form Status: Open

Close Form? No

Centralised repository

Business intelligence and analytics

TMAP ID: TMAP ID _8/5/2020_1.jpg

Lat: 1.3920468 Long: 103.9028103

Notes:

Text input

Camera with geotagging

This message was sent with Low importance

BK Boon-Haw Koh Tue 8/4/2020 11:27 AM To: Boon-Haw Koh

Dear All

A TMAP request has been raised for your information and necessary action, if any.

- Title: This is a test TMAP
- TMAP ID: 58

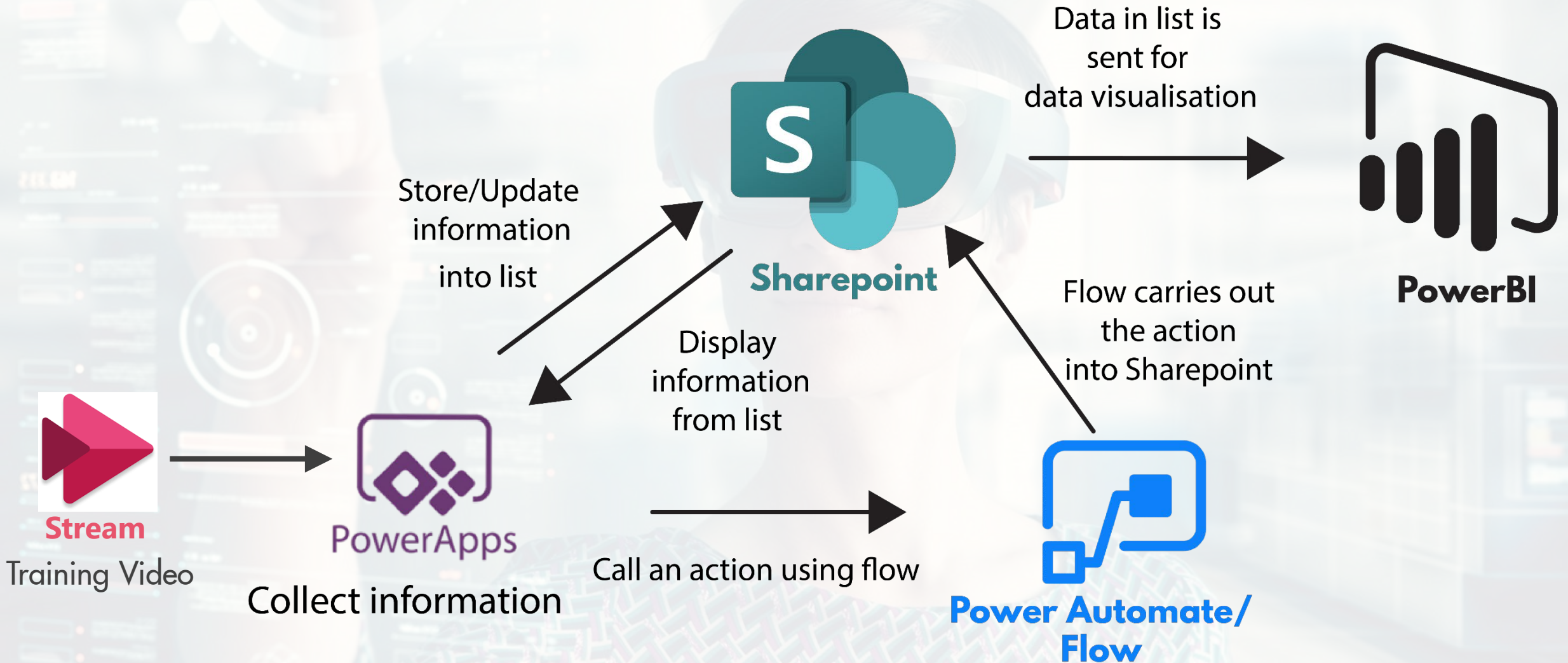
Please click on this [link](#) to access the TMAP for more details.

Regards,
The Mitigator
TMAP Easily

Reply Forward

Built-in approval / extension and notification process

Business process flows



Golden Retriever Eco-System

Paper to digital process



MITI.GATOR
TMAP easily



HOSE I
Intelligent Temporary Hose / Connection Management



RED.CON



Future connection to new apps

MOC

Inspection

Human factors

Temporary Repairs / Clamps

.....

Training

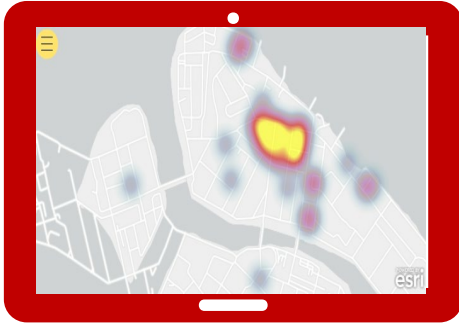


Assurance



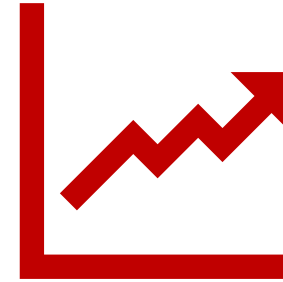
Summary - Benefits of Golden Retriever Ecosystem

1



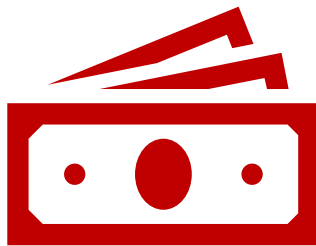
Real-time actionable insights to make data-driven decisions for risk reduction

2



Improve Business outcome - Process Safety, Business Productivity and achieve Operation Excellence

3



DIY effort and highly tailored application that contributes to Cost Saving

4



Support Digitalisation culture by doing away with paper and can be integrated into future Digital Twin

DIGITALISATION – POSSIBILITY IS



confined space work was safely executed in record time.

