SHE Asset Management Integrated with GIS

for Steel Industry

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Get to know

The Background

Steel industry area has several plant and there are lot of SHE asset which have to be monitor and maintain. But there's many which used manual asset management system, that inefficient and occurs some problem in managing the asset.

Geographic Information System (GIS) can used to visualize the asset location using coordinate in geographical map, then integrated to the database to get and display detail asset information.

PIECES Analysis

No	Problem	P	I	E	C	E	S
1.	Management of SHE asset data not well system	√					
2.	Data is not integrated and lack visualization	√				√	
3.	Difficulty in updating data	√					
4.	The required data/information is not in accordance with current conditions (update delayed)	√	√				√
5.	Information on SHE assets is difficult to access		√			√	√
6.	Information provision is still manual, due to the data is unsorted or random		√	√	√		√
7.	Delay in monitoring due to not having a reminder causes poorly maintained facilities so causing damage	√	√	√			

Performance, Information, Economy, Control, Efficiency, and Service

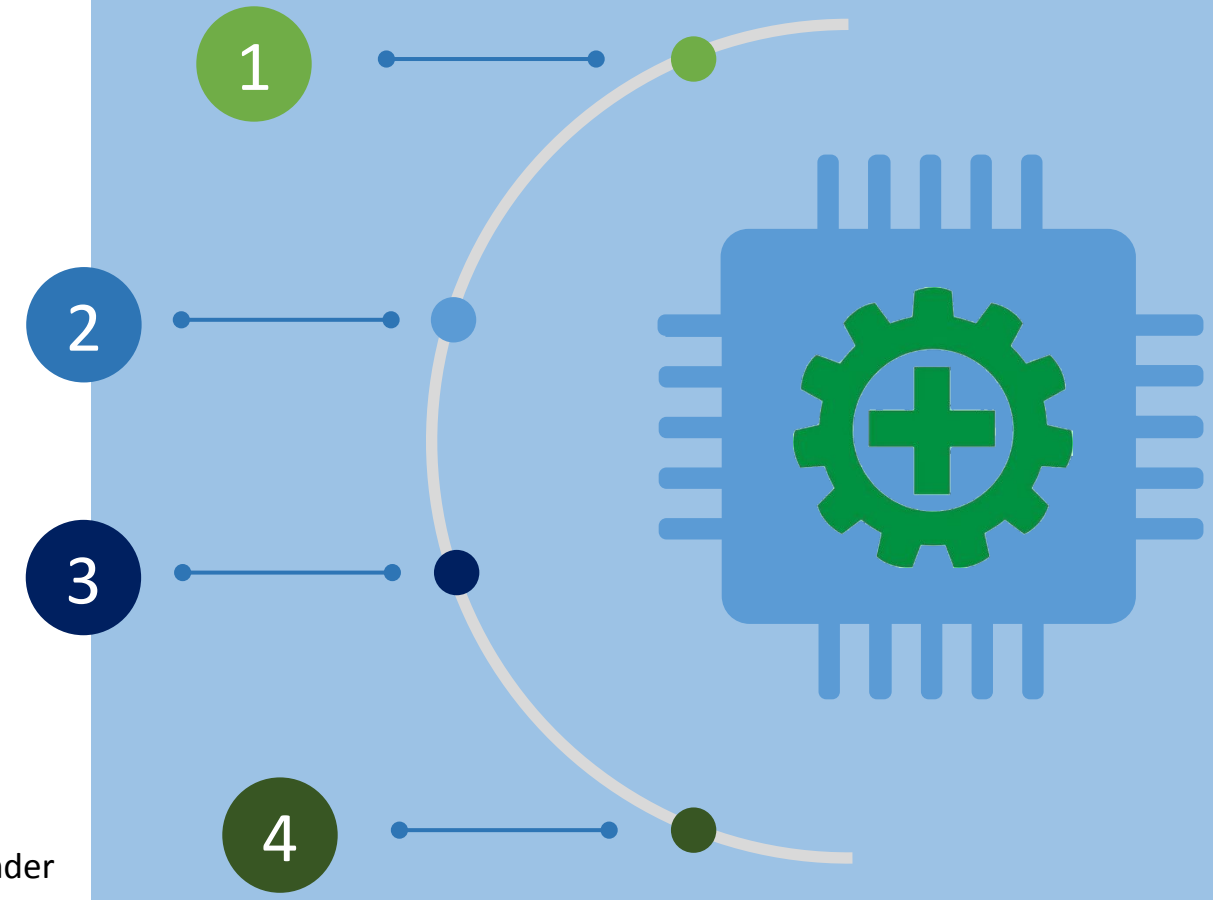
Problem & Solution

Prob 1. Unintegrated data
Built database and integrating between data

Prob 2. Lack of Visualization
Assets visualization using web-based GIS

Prob 3. Unsorted Assets' Document
Clustering assets in each plant and display asset's information

Prob 4. Delay Monitoring
Last checking date information as monitoring reminder



PURPOSE

The asset maintained and can be controlled to reduce the possible risks

Administrative improvement

Integrated SHE asset management system is useful to help in evaluating, performance, planning, and monitoring

Evaluating performance

Effective delivery of SHE information

Information Sharing

The big data analysis on SHE management have become a reference influencing safety-related decision making

Decision Making

GOAL

Data Collect

We collect several data of SHE asset as trial to applied in the system

Safety

1. Hydrant box
2. Light Fire Extinguisher
3. Assembly point

Health

1. First Aid Box
2. Clinic

Environment

1. Continous Emission Monitoring System
2. Water Treatment Plant
3. Waste Water Treatment Plant
4. Air Quality Monitoring System
5. Sewage Treatment Plant

RESULT

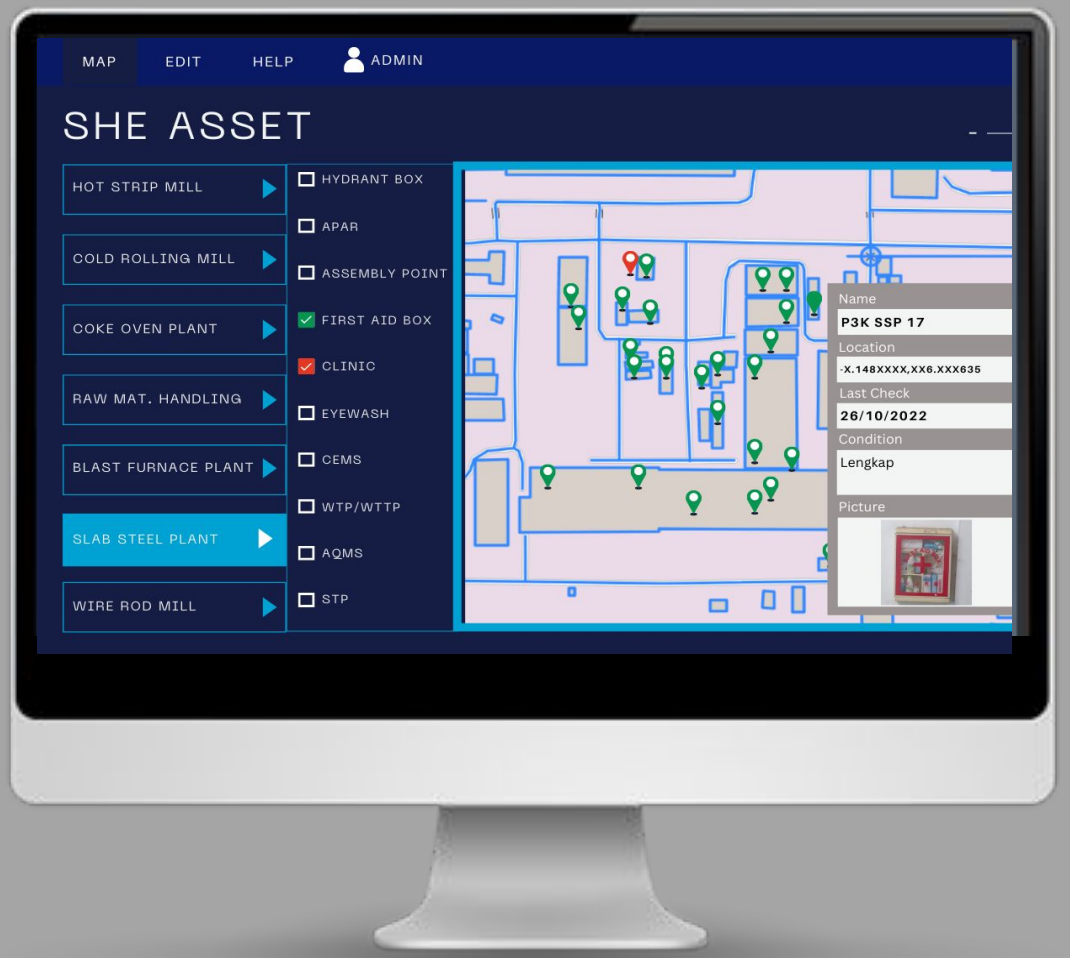
Asset Coordinate visualization **01**

Asset cluster helps the monitoring activities can proceed gradually **02**

Discuss with management **03**

The spatial data embedded with assets information on the offline geographical map **04**

The spatial data and assets information can be managed with user interface and imported from the asset document given **05**



MAP EDIT HELP ADMIN

SHE ASSET

- +

HOT STRIP MILL

COLD ROLLING MILL

COKE OVEN PLANT

RAW MAT. HANDLING

BLAST FURNACE PLANT

SLAB STEEL PLANT

WIRE ROD MILL

- [ ] HYDRANT BOX
- [ ] APAR
- [ ] ASSEMBLY POINT
- [x] FIRST AID BOX
- [x] CLINIC
- [ ] EYEWASH
- [ ] CEMS
- [ ] WTP/WTTP
- [ ] AQMS
- [ ] STP

What We Can Expect from this SHE Asset Management System?

- User friendly
- Avoid it from damage depreciation of function

Created awarness in risk management to doing good asset management

Increase security against asset loss due to good management

Reduce time consuming on collecting and updating data

The visualization can be used to ensure the availability & condition, and monitoring

Improving the performance of SHE asset management towards asset maintenance and sustainability

Summary

- ✔ Managing SHE assets by mapping them provides a possibility monitoring the asset accurately
- ✔ The SHE assets clustering could lead to effectivity and flexibility on asset monitoring activity
- ✔ Facilitate the work of workers, no time-consuming
- ✔ This clustering assets technique using similar reliability distributions of asset is enables addressing the maintenance optimization problem of all the assets belonging to the same cluster.
- ✔ This system can be apply to other asset

SHE Assets Management System

Integrated with GIS for Steel Industry

References

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Thank you

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