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Experience energy

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CONSULTANCY
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TOYOTA YASKAWA faurecia



ME
Mechanical Engg.

Mat^{er}ials
E^{ngg.}

Smart Sustainability Assessment

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CPDM

Project Name: Smart Sustainability Assessment

Objectives:

1. Modelling manufacturing system for collecting inventory (sustainability) data in MSMEs.
2. Key performance indicators (KPIs) selection and Assessment.

Deliverables:

Capability to show online sustainability assessment.

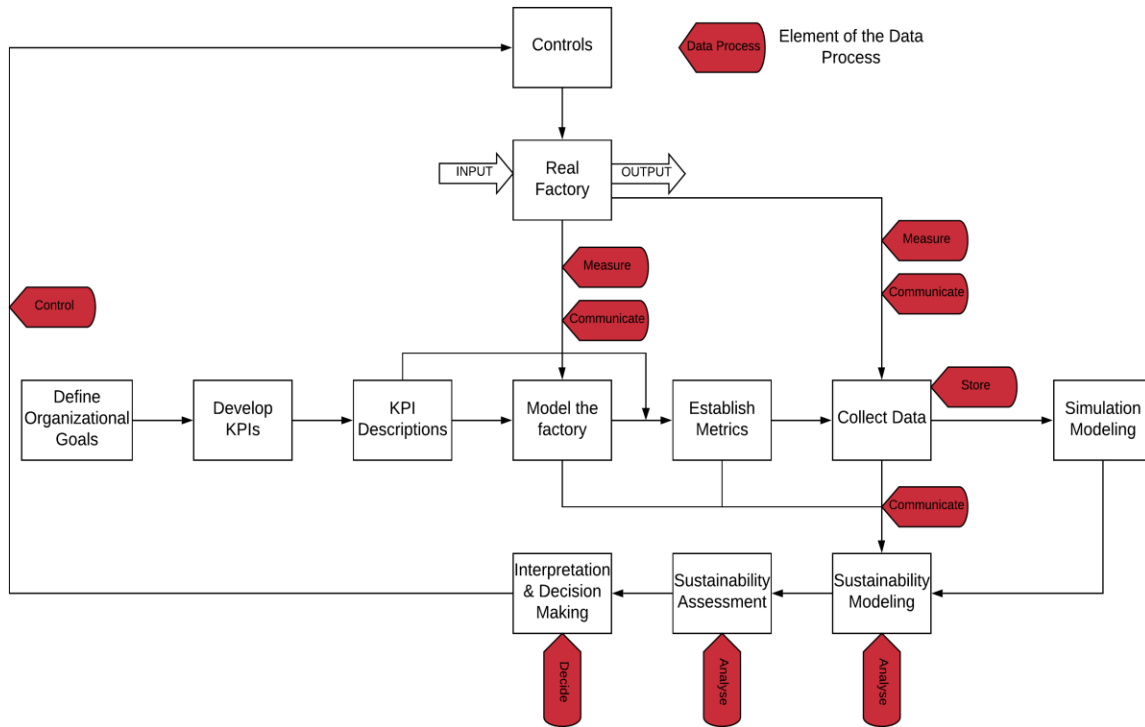
Significance for industries:

Environmental concerns, economic benefits, social issues and government legislations are forcing industries to improve their sustainability performance. Our work will help industries to systematically map the whole factory to identify data sources for performing sustainability assessment.

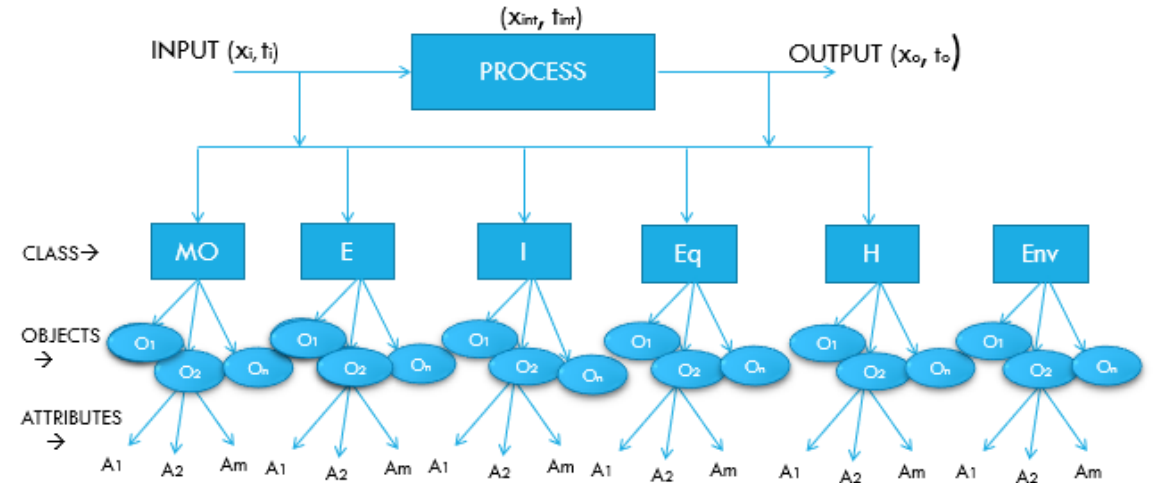
Current status:

Frameworks for a) modelling manufacturing process and factory and b) KPI selection and assessment are developed.

Framework for KPI selection and Assessment



Framework for modelling manufacturing process



Object vector $[O] = [O_M, O_E, O_I, O_{Eq}, O_H, O_{Env}]^t$
 For each object
 Attribute vector (as is) $[A] = [A_1, A_2, A_3, \dots, A_m]^t$
 Attribute vector (should be) $[A^*] = [A_1^*, A_2^*, A_3^*, \dots, A_m^*]^t$
 ** Measure $[A] - [A^*]$
 ** Decide what to be done.
 ** Store measured values and decision
 ** Send decision info to enabler for actuation

- MO- Material Objects
- E- Energy
- I- Information
- Eq- Equipment
- H- Human
- Env- Environment

Process Representation



ME
Mechanical Engg.



Materials
Engg.



Thanks!