

The speakers of the session Mr.Kalyan Ram and Mr.Mallikarjun Sharma delivered an introduction to data validation and analytics. Data validation which is a concept He gave an insight to the smart technology that can be implemented in an industry and strategy for digital transformation in the sector. He also explained the various steps involved in implementing IOT based manufacturing in major industrial sectors such as automobile and manufacturing industry and spoke of the technology stack which works within the set framework for implementing such concepts in the industry.

Some of the types of data validation include:

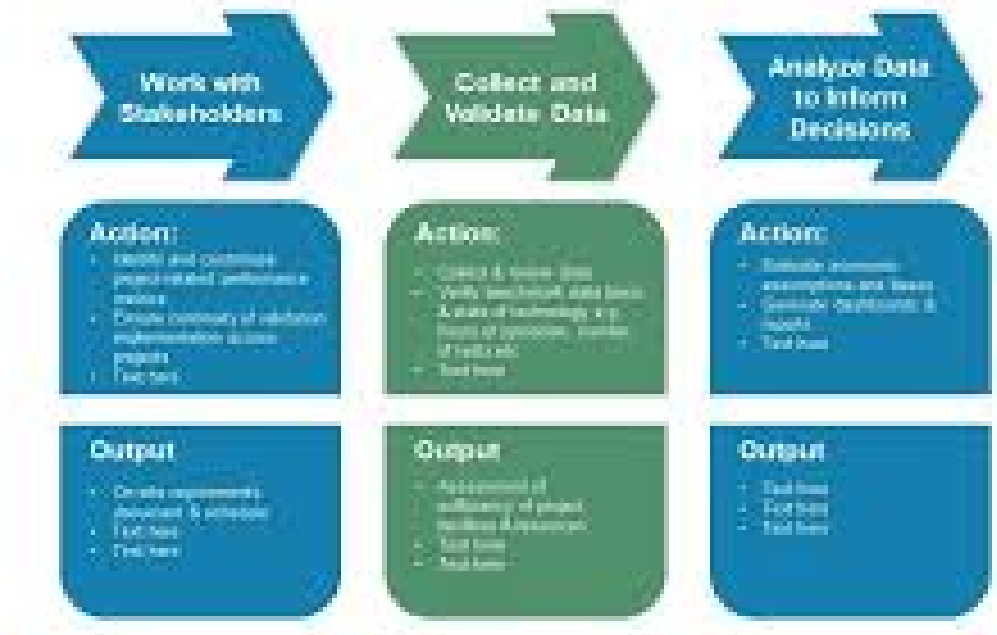
- Code validation
- Data type validation
- Data range validation
- Constraint validation
- Structured validation

The course content highlights delivered in the session is as follows:

- Data-type check. Data type validation is customarily carried out on one or more simple data fields.
- Simple range and constraint check.
- Code and cross-reference check.
- Structured check.
- Consistency check.
- Examples of data validation.
- Post-validation actions.

Data Validation Process Incorporated into Organizational FOA Process

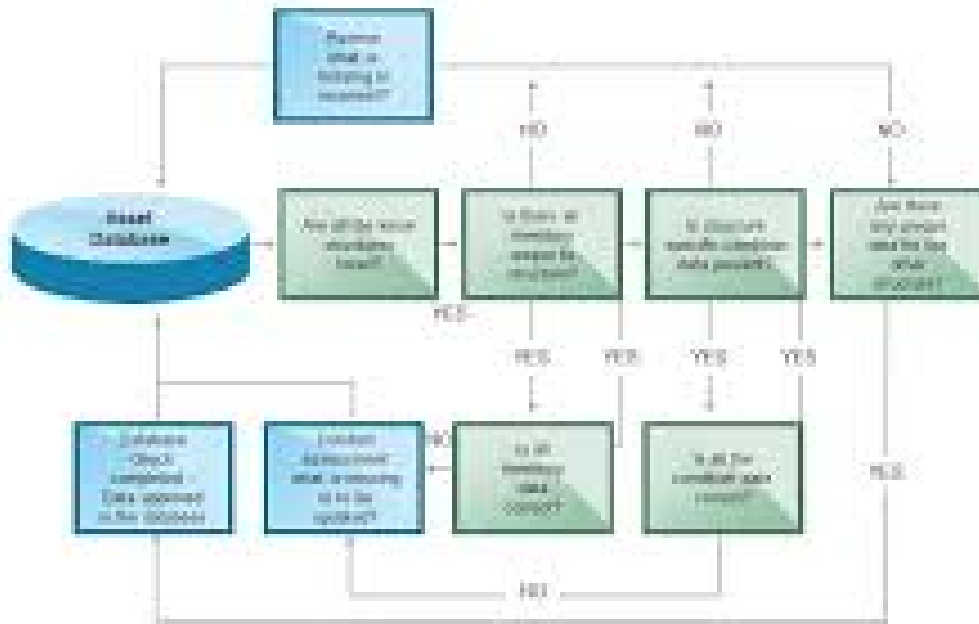
(The above FOA process is not a linear process and may repeat several iterations)



Speakers explained about the data validation process incorporated into organizational FOA process as well as the asset management process .

Asset Data Validation Process Flow Chart

(This chart is for reference only. It is not intended to be used as a standard process.)



The complex requirements of projects and the increasing number of project participants means we amass an enormous amount of information. When this information is imported into and exported from authoring tools, there is a requirement for sharing and consistent maintenance of data. The effective management of an as built asset relies heavily on the accuracy of the data collated and how it is validated throughout each stage of the project. In today's modern methods of construction, digital asset management is essential to not only soft landings but the continuous management of the asset through its entire lifecycle. But this can only happen if the hard work is put in at the beginning and the project owner commits to digital information management from the very start. From then on, we can integrate the technologically advanced process of digitising the way we design, build and operate to ultimately meet the operational needs of the assets' end-user.

The graphical and non-graphical data in project models is essential to producing accurate information, both at construction and operational stages, allowing asset owners and occupiers ease of access to information and better management of

spaces, materials and energy systems. This data needs to undergo continuous validation and verification to update information before the initial handover process; it must also reflect any changes during the build phase from the original design.

SNAP SHOTS OF DAY 4

Preparing for Industry 4.0 – Collaborative Virtual Learning Environments in Engineering Education

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- In consideration of future employment domains
- Highly individualized and cross-linked production processes.
- Virtual learning environments (VLEs) and interactive and collaborative components within higher educational e-learning methods
- As a result, there is large potential for research

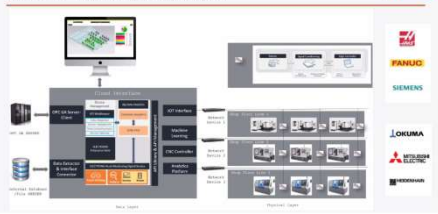
*References: Katharina Schuster



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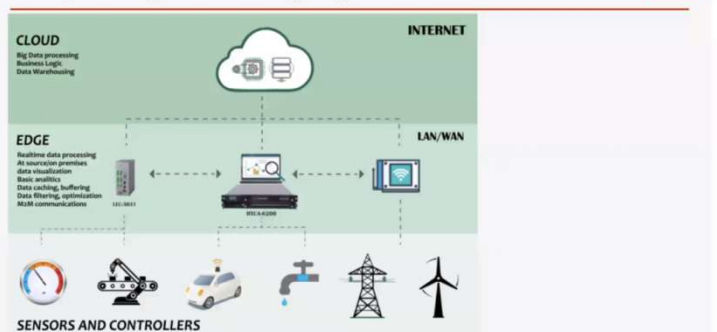
Industry 4.0 – Machine Layout block diagram

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Industry 4.0 – Edge and Cloud Computing

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