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# Digital Twins

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## Résumé

One of the major concerns globally is reliability and management of fluid handling energy systems. This includes both the conventional and non-conventional energy systems. With the advent of powerful computers, it is now becoming possible to carry out numerical computations at much faster speed. Furthermore, extensive research in data mining and artificial intelligence is enabling enhancement in predictive ability. Presently fast, robust and accurate sensors are able to provide data about various process variables enabling monitoring of the energy assets possible. Furthermore, accuracy of the numerical computations has increased significantly and in theory there is a possibility to simulate flow process from local level to the global level within an energy system. Thus a visualisation tool can be deployed that inputs data from both the sensor network and simulations and provides design, analysis, operation and maintenance information in an interactive manner. Image analysis and signal conditioning are integral part of a digital twinning process. This will enable a digital twin of an energy asset to run on a powerful computer providing reliable information about state of the energy system.

**Mots-Clés:** Digital twins, Visualisation, Image processing

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