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Methodology for evaluating the alignment of a multi-level CPPS digital twin

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In our project, the digital twin of a production system is considered to be multi-level: component level (automation engineer), equipment level (automation engineer / production engineer) and line level (production engineer). A calibration of the numerical simulation models making up this digital twin is necessary to align these numerical models with the physical twin, in order to give the digital twin a sufficiently similar behavior to its physical twin. From the point of view of DT usage, an "acceptable" alignment is a behavioral and temporal deviation that does not call into question the purpose of the decision
The scientific objectives of the master internship are therefore:
(i) define indicators that characterize the alignment of a digital twin with respect to a physical twin;
(ii) Define methodology for evaluating the alignment of a multi-level CPPS digital twin.

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