Form 4: New Work Item Proposal

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| Circulation date: Click here to enter text.Closing date for voting: Click here to enter text. | Reference number: ISO XXXXX-1(to be given by Central Secretariat) |
| Proposer (e.g. ISO member body or A liaisonorganization)Korea Agency for Technology and Standards (KATS) | **ISO/TC** 184**/SC** 4[ ]  Proposal for a new PC |
| SecretariatClick here to enter text. | **N** draft ver0.0 |

A proposal for a new work item within the scope of an existing committee shall be submitted to the secretariat of that committee with a copy to the Central Secretariat and, in the case of a subcommittee, a copy to the secretariat of the parent technical committee. Proposals not within the scope of an existing committee shall be submitted to the secretariat of the ISO Technical Management Board.

The proposer of a new work item may be a member body of ISO, the secretariat itself, another technical committee or subcommittee, an organization in liaison, the Technical Management Board or one of the advisory groups, or the Secretary-General.

The proposal will be circulated to the P-members of the technical committee or subcommittee for voting, and to the O-members for information.

**IMPORTANT NOTE:Proposals without adequate justification risk rejection or referral to originator**.
Guidelines for proposing and justifying a new work item are contained **in** [**Annex C of the ISO/IEC Directives, Part 1**](http://www.iso.org/sites/directives/directives.html#toc_marker-55)**.**

[ ]  The proposer has considered the guidance given in the [Annex C](http://www.iso.org/sites/directives/directives.html#toc_marker-55) during the preparation of the NWIP.

**Proposal** (to be completed by the proposer)

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| **Title of the proposed deliverable.****English title:**Digital twin manufacturing framework - Part 2: Framework**French title (if available):**Click here to enter text.*(In the case of an amendment, revision or a new part of an existing document, show the reference number and current title)* |
| **Scope of the proposed deliverable.**This part of the ISO xxxxx series specifies architectural framework, set of terms and definitions, and requirements for digital twin manufacturing realization in terms of information modeling, hardware-in-the-loop simulation, information exchange, identification of information objects. |
| **Purpose and justification of the proposal\***The digital twin in manufacturing is a virtual representation of the physical model of asset, process, system, or service by collecting data from manufacturing, maintenance, operations, and operating environments. The digital twin is a living model that continuously updates and changes as their counterpart changes to represent near real-time status, working condition or position.To realize digital twin in manufacturing, digital representation of the resources are to be made to detect anomalies in the manufacturing resources. The digital representation provides information of the resources (i.e., personnel, equipment, physical asset, material, process segment, etc.) and the dynamic behaviors of the resources. It is an understanding of the characteristics and capabilities of the resources and how the resources operate and respond throughout production lifecycle. The digital representation constantly communicates with the manufacturing resources through exchange of operational and environmental data. The digital twin can be used for systematic identification, optimize operation, near-accurate monitoring, adapt to changes, etc.ISO XXXXX addresses digital twin manufacturing in terms of digital representation of manufacturing resources including modeling of physical configuration and dynamic changes. The resulting outputs from ISO XXXXX series are several published parts; - Part 1: Overview and general principles- Part 2: Framework - Part 3: Digital representation of manufacturing resources - Part 4: Information exchange between digital twin manufacturingThis part, Part 2, proposes to include architectural framework, set of terms and definitions, and requirements for digital twin manufacturing realization in terms of information modeling, hardware-in-the-loop simulation, information exchange, identification of information objects.*Consider the following: Is there a verified market need for the proposal? What problem does this standard solve? What value will the document bring to end-users? See Annex C of the ISO/IEC Directives part 1 for more information.* *See the following guidance on justification statements on ISO Connect:* [*https://connect.iso.org/pages/viewpage.action?pageId=27590861*](https://connect.iso.org/pages/viewpage.action?pageId=27590861) |
| **Preparatory work** (at a minimum an outline should be included with the proposal)[ ]  A draft is attached [x]  An outline is attached [ ]  An existing document to serve as initial basisThe proposer or the proposer's organization is prepared to undertake the preparatory work required: [x]  Yes [ ]  No |
| **If a draft is attached to this proposal,:**Please select from one of the following options (note that if no option is selected, the default will be the first option):[x]  Draft document will be registered as new project in the committee's work programme (stage 20.00)[ ]  Draft document can be registered as a Working Draft (WD – stage 20.20)[ ]  Draft document can be registered as a Committee Draft (CD – stage 30.00)[ ]  Draft document can be registered as a Draft International Standard (DIS – stage 40.00) |
| **Is this a Management Systems Standard (MSS)?**[ ]  Yes [x]  No NOTE: if Yes, the NWIP along with the Justification study (see [Annex SL](http://www.iso.org/sites/directives/directives.html#toc_marker-76) of the Consolidated ISO Supplement) must be sent to the MSS Task Force secretariat (tmb@iso.org) for approval before the NWIP ballot can be launched. |
| **Indication(s) of the preferred type or types of deliverable(s) to be produced under the proposal.**[x]  International Standard [ ]  Technical Specification [ ]  Publicly Available Specification [ ]  Technical Report |
| **Proposed development track** [ ]  1 (24 months) [ ]  2 (36 months - default) [x]  3 (48 months) **Note: Good project management is essential to meeting deadlines. A committee may be granted only one extension of up to 9 months for the total project duration (to be approved by the ISO/TMB).** |
| **Known patented items (see ISO/IEC Directives, Part 1 for important guidance)**[ ]  Yes [x]  No If "Yes", provide full information as annex |
| **Co-ordination of work:** To the best of your knowledge, has this or a similar proposal been submitted to another standards development organization? [ ]  Yes [x]  NoIf “Yes”, please specify which one(s): Click here to enter text. |
| **A statement from the proposer as to how the proposed work may relate to or impact on existing work, especially existing ISO and IEC deliverables. The proposer should explain how the work differs from apparently similar work, or explain how duplication and conflict will be minimized.**The existing deliverables are not enough for the attributes to represent the object relationships, and do not consider the virtual representation of the resources and activities to be used for digital twin manufacturing. In addition, they do not cover input resources (such as raw production material, assembly parts), consumables, and work pieces in process. Going beyond the existing deliverables, this series of standards will specify the digital representation of the resources, relationships among resources, and their status changes (existence, physical status change, and availability, etc.) during manufacturing processes.Furthermore, this proposal provides the digital representation of manufacturing resources including personnel, material and process segment as well as devices (called equipment in this document) which are involved in work in process for digital twin manufacturing. |
| **A listing of relevant existing documents at the international, regional and national levels.**IEC 62264, IEC 62832 |
| **Please fill out the relevant parts of the table below to identify relevant affected stakeholder categories and how they will each benefit from or be impacted by the proposed deliverable(s).**

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|  | **Benefits/impacts** | **Examples of organizations/companies to be contacted** |
| **Industry and commerce – large industry** | Click here to enter text. | GESiemens |
| **Industry and commerce – SMEs** | Click here to enter text. | Click here to enter text. |
| **Government** | Click here to enter text. | Click here to enter text. |
| **Consumers** | Click here to enter text. | Click here to enter text. |
| **Labour** | Support for emerging new world economy | Click here to enter text. |
| **Academic and research bodies** | Click here to enter text. | Click here to enter text. |
| **Standards application businesses** | Click here to enter text. | Click here to enter text. |
| **Non-governmental organizations** | Click here to enter text. | Click here to enter text. |
| **Other (please specify)** | Click here to enter text. | Click here to enter text. |

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| **Liaisons:**A listing of relevant external international organizations or internal parties (other ISO and/or IEC committees) to be engaged as liaisons in the development of the deliverable(s).ISO TC 184/SC 5, IEC TC65 | **Joint/parallel work:****Possible joint/parallel work with:** [ ]  IEC (pleasespecify committee ID)Click here to enter text.[ ]  CEN (pleasespecify committee ID)Click here to enter text.[ ]  Other (pleasespecify)Click here to enter text. |
| **A listing of relevant countries which are not already P-members of the committee.**Click here to enter text.Note: The committee secretary shall distribute this NWIP to the countries listed above to see if they wish to participate in this work |
| **Proposed Project Leader** (name and e-mail address)Ms. Sung Hei KimETRI, Koreashkim@etri.re.krClick here to enter text. | **Name of the Proposer** (include contact information)Click here to enter text. (KATS) |
| **This proposal will be developed by:**[x]  An existing Working Group (please specify which one: SC 4/WG 15)[ ]  A new Working Group (title: Click here to enter text.)(Note: establishment of a new WG must be approved by committee resolution)[ ]  The TC/SC directly[ ]  To be determined |
| **Supplementary information relating to the proposal**[x]  This proposal relates to a new ISO document;[ ]  This proposal relates to the adoption as an active project of an item currently registered as a Preliminary Work Item;[ ]  This proposal relates to the re-establishment of a cancelled project as an active project.Other: Click here to enter text. |
| [ ]  Annex(es) are included with this proposal (give details)Click here to enter text. |
| Additional information/questionsClick here to enter text. |