

ISO 23247-4:2021-10 (E)

Automation systems and integration - Digital twin framework for manufacturing - Part 4: Information exchange

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Networking view of the digital twin reference models	2
4.1	Overview	2
4.2	User network	3
4.3	Service network	3
4.4	Access network	3
4.5	Proximity network	4
5	Requirements for information exchange in the user network	4
5.1	Overview	4
5.2	Provisioning	4
5.3	On-demand status acquisition	4
5.4	Standardized method for information exchange	4
5.5	Verification of exchanged digital models	5
5.6	Security	5
5.7	Synchronization	5
5.8	Exchange of digital models	5
6	Requirements for information exchange in the service network	5
7	Requirements for information exchange in access network	5
7.1	Overview	5
7.2	Connectivity	6
7.3	Standardized method for communication	6
7.4	Synchronization	6
7.5	Transaction method	6
7.6	Support of mobility	6
7.7	Security	7
8	Requirements for information exchange in proximity network	7
8.1	Overview	7
8.2	Support of local connectivity	7
8.3	Support of adaptation	7
8.4	Support of data volume, transmission efficiency, and storage	7
Annex A (informative)	Technical discussion -- Implementation options for digital twin framework for manufacturing	8
Annex B (informative)	Dynamic scheduling use case	13
Annex C (informative)	Advanced metrology use case	21

Annex D (informative) Optimization of material removal operations use case	29
Annex E (informative) Example of enhanced G-code	39
Bibliography	41