

**TRACKWORK COORDINATED COMBINED SERVICES
MODEL (TWK CCSM) BIM REQUIREMENTS**

- 1.1 The Contractor shall coordinate with the TWK Contractor to develop and update Pre-Final Design TWK CCSM, Final Design TWK CCSM and Updated Final Design TWK CCSM to form a complete project, services and / or systems prior to construction.
- 1.2 The Contractor shall discuss and agree with the TWK Contractor on the types of model checks, the hard and soft clashes to be identified and resolved prior to TWK CCSM creation. The agreed plans shall be submitted for the Engineer's acceptance and documented in the BEP within the Contract and the TWK Contract.
- 1.3 The Contractor shall be accountable for the data and information accuracy of their scope of work in the Pre-Final Design TWK CCSM, Final Design TWK CCSM and Updated Final Design TWK CCSM developed by the TWK Contractor.
- 1.4 The Contractor shall coordinate with the TWK Contractor and submit the BIM Models and necessary BIM Deliverables for 3D Coordination and the development of the TWK CCSM. The Contractor shall provide all information reasonably required by TWK Contractor in a timely and professional manner to ensure no impact to the TWK Contract's BIM Deliverables submission key dates. Any claim of additional costs by Civil, TWK and System-Wide Contractors (SWCs) as a result of the Contractor's failure in keeping to these dates shall be borne by the Contractor.
- 1.5 The Contractor shall ensure that the version of BIM Models submitted to TWK Contractor for the TWK CCSM development are up to date for the purpose of supporting construction coordination and design interfacing works. The Contractor shall be responsible to resolve all data losses due to conversion of the model version and format. The Contractor shall rectify and resubmit immediately of any discrepancy or data losses found in their submitted BIM Models upon being notified by the TWK Contractor and the Engineer.
- 1.6 The Contractor shall participate in all necessary ICE Meetings facilitated by the TWK Contractor to resolve all necessary design and coordination clashes on design, penetration openings, installation and maintenance clearances between the Contract and the TWK Contract, and upon request by the Engineer.

PS-21-36
BIM Annex C

- 1.7 The Contractor shall ensure that their comments are updated in the Final Design TWK CCSM and Updated Final Design TWK CCSM, SEM drawings and Conduit Management Drawings (CMD) as part of the sign-off exercises.
- 1.8 The Contractor shall sign-off the viewpoints with comments printed out by the TWK Contractor as a complete signed-off TWK CCSM submission.
- 1.9 The Contractor shall coordinate with the TWK Contractor on all sizes of conduit and cable routings to be modelled in the BIM Models. The Contractor shall ensure accuracy and consistency between the BIM Models and Conduit Management Drawings (CMD) within the Contract and the TWK CCSM developed by the TWK Contractor.
- 1.10 The Contractor shall be responsible to update their BIM Models to validate that the identified design and construction clashes documented in the clash check analysis reports by the TWK Contractor, are resolved on a monthly basis.
- 1.11 The Contractor shall provide his immediate attendance during the construction phase of the project to make adjustment to the BIM models to be updated into the TWK CCSM due to site constraints, always with the view of minimizing delays to the progress of the Civil, TWK Contractors and SWCs.