

**Information and Communications Technology Industry Training Advisory Committee  
Software Products and Software Services (SW) branch  
Unit of Competencies**

1. Title	Construct a data architecture for an information system
2. Code	ITSWAR611A
3. Range	Integrate data assets to business process models to form a registry of data architecture artefacts to support the development of information systems [Architecture – Data Architecture]
4. Level	6
5. Credit	5
6. Competency	<p style="text-align: right;"><u>Performance Requirement</u></p> <p>6.1 Understand different artefacts in data architecture. Be able to understand the different artefacts in a data architecture (see Remark 1)</p> <p>6.2 Identify the driving factors for building the data architecture Be able to identify the factors for development and use of the data architecture; those factors could be related to</p> <ul style="list-style-type: none"> <li>▪ business drivers</li> <li>▪ IT strategy</li> <li>▪ regulatory requirements</li> </ul> <p>6.3 Model data flows and structures Be able to</p> <ul style="list-style-type: none"> <li>▪ develop business process models that describe the data flows between different systems and parties</li> <li>▪ develop data models that describe the data structures of the existing data assets and new application requirements</li> <li>▪ perform trade-offs to harmonize any conflicting models into standardized models to maximize their reusability</li> </ul> <p>6.4 Document the required data architecture artefacts Be able to translate the process and data models into data architecture artefacts</p> <p>6.5 Develop, publish, and maintain a registry of data architecture artefacts. Be able to</p> <ul style="list-style-type: none"> <li>▪ develop and publish a registry of data architecture artefacts</li> <li>▪ provide rules and guidelines to manage the life cycle of data architecture artefacts and to ensure the contents are up-to-date</li> </ul>
7. Assessment Criteria	The integrated outcome requirements of this UoCs are the abilities to (i) develop the required data architecture artefacts from data assets; and (ii) develop, publish, and maintain a registry of data architecture artefacts as the data architecture of the information system to be developed.
Remark	<p>1. Examples of data architecture artefacts are</p> <ol style="list-style-type: none"> <li>a) business process model, i.e. documentation of how and where data is collected, stored, processed and flowed in an organisation;</li> <li>b) data dictionary, i.e. listings and specifications of the data entities used in electronic and paper data assets;</li> <li>c) conceptual and logical data models, i.e. data models to represent the structures and relationships of data entities, e.g. UML diagrams;</li> <li>d) system implementation data model, e.g. database, XML schemas;</li> <li>e) data exchange matrix, e.g. message and file formats for data exchange between different systems, business units, and with external parties; and</li> <li>f) data entity / business function / access control matrix.</li> </ol> <p>2. Pre-requisites: ITSWAR608A, ITSWAR609A, ITSWAR610A</p>