

**Specification of Competency Standards**  
**for the Information & Communications Technology Industry**  
**Unit of Competency**

Functional Area - Architecture

Title	Determine technology mix for the design and development of embedded software systems
Code	111126L6
Range	Based on the adopted embedded software architecture model(s), standards, tools and other resources, choose the most appropriate combination of technology mix to design and develop a given embedded software system
Level	6
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Comprehend different embedded software architecture models and the technologies (See Remark 1) behind them</p> <ul style="list-style-type: none"> <li>• Be able to: <ul style="list-style-type: none"> <li>○ formulate different combinations of the adopted embedded software architecture model for a given embedded software system to be developed for the organisation</li> <li>○ review and recommend a particular combination of the adopted embedded software architecture models (including its design, patterns, variants, and various supporting technologies) for a given embedded software system</li> </ul> </li> </ul> <p>2. Select and recommend the most appropriate technology mix for the adopted embedded software architecture model</p> <ul style="list-style-type: none"> <li>• Be able to: <ul style="list-style-type: none"> <li>○ review various technology mixes (combinations of technology)</li> <li>○ perform comparison and trade-offs analysis among various technology mixes (See Remark 2)</li> <li>○ propose the most appropriate technology mix to design and develop a given embedded software system based on the adopted embedded software architecture model</li> </ul> </li> </ul> <p>3. Choose the most appropriate technology combination to design and develop a given embedded software system based on the adopted embedded software architecture model in a professional manner</p> <ul style="list-style-type: none"> <li>• review, select and recommend the most appropriate technology combination to design and develop a given embedded software system based on the adopted embedded software architecture model</li> <li>• ensure that the most appropriate combination supports good software design and development practices, and are in compliance with organisation's guidelines as well as any local and international laws and regulatory requirements, where applicable</li> </ul>
Assessment Criteria	The integrated outcome requirement of this UoC is the ability to select and recommend the most appropriate technology mix (combination) for the design and development of a given embedded software system based on the adopted embedded software architecture model.
Remark	<p>1. Examples of various technologies of embedded software framework and platforms are Embedded Linux, WebOS, Android, Desktop Linux/Windows, QNX. Integrity, VxWorks, Ubuntu and Debian, Windows for IoT, Embedded Configurable Operating System (eCos), etc.</p> <p>2. This may involve performing trade-off analysis on an implementation of a given system function through software, hardware and/or the most optimal combination of both.</p>

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	3. Pre-requisite: ITSWAR619A 4. Co-requisite: ITSWAR621A
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