

# **The modular quantum computer**

**How standards support  
the Dutch eco-system**



# Aims

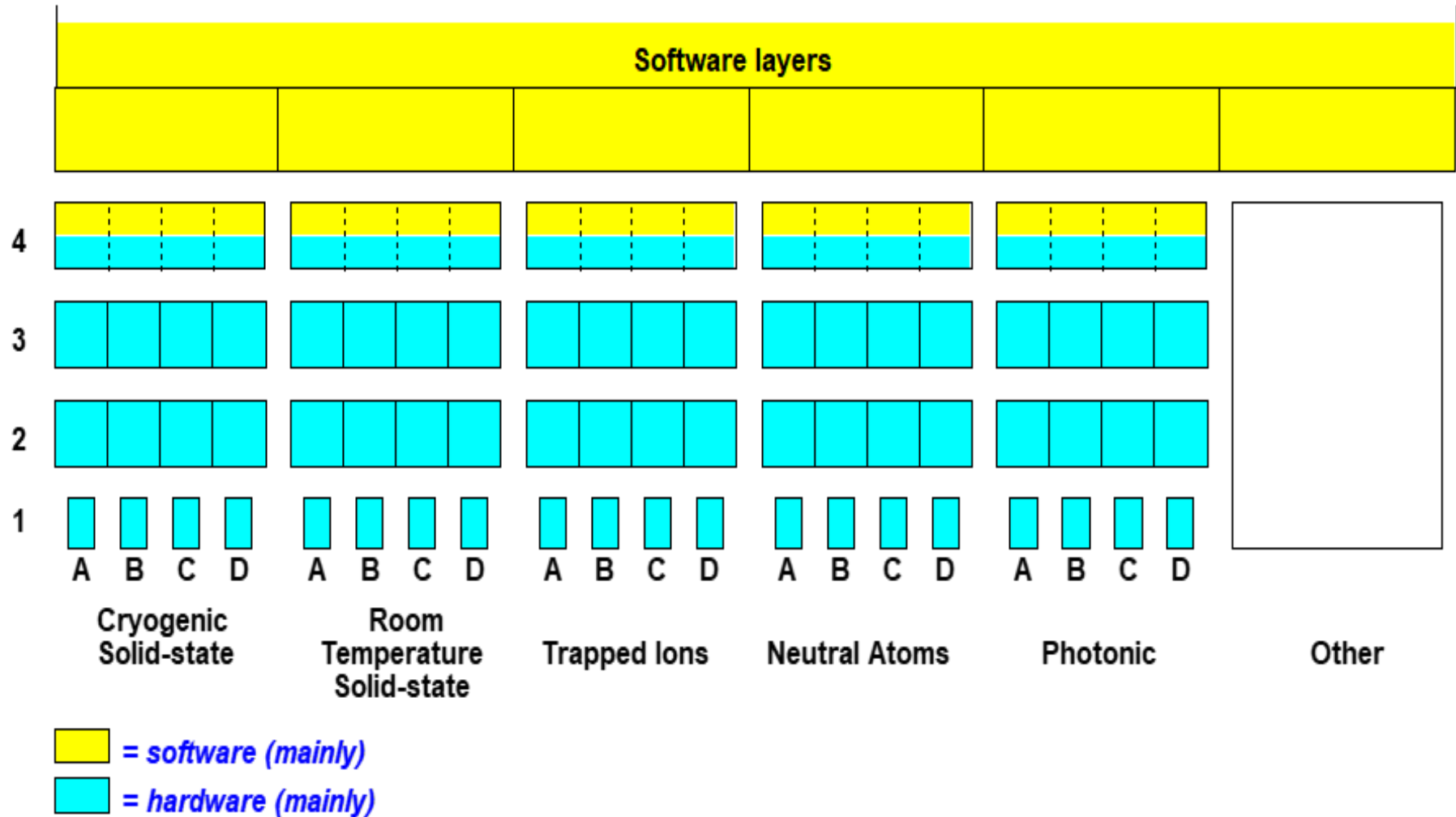
- **A supply chain of various modules**
- **Mature products from different vendors**  
*(hardware and software)*
- **That can interwork with each other**
- **To build a quantum computer with modules**
- **Meeting requirements from customers**  
*(research institutes, system-integrators, ..)*
- **Strong position of the Dutch quantum industry**



# Subdividing “Quantum Computing” into smaller chunks

Multiple hardware stacks

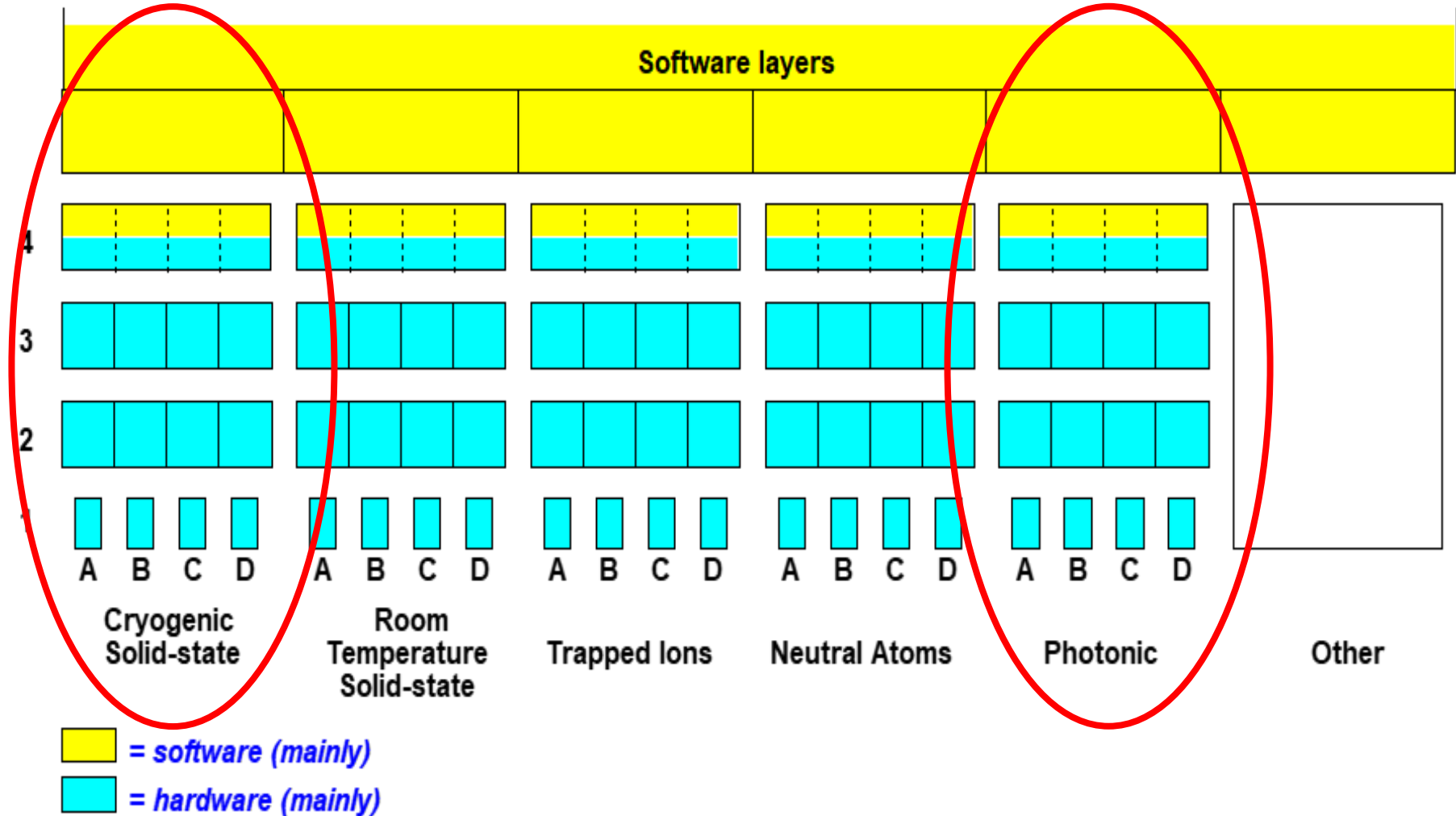
Multiple architecture families



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Multiple hardware stacks

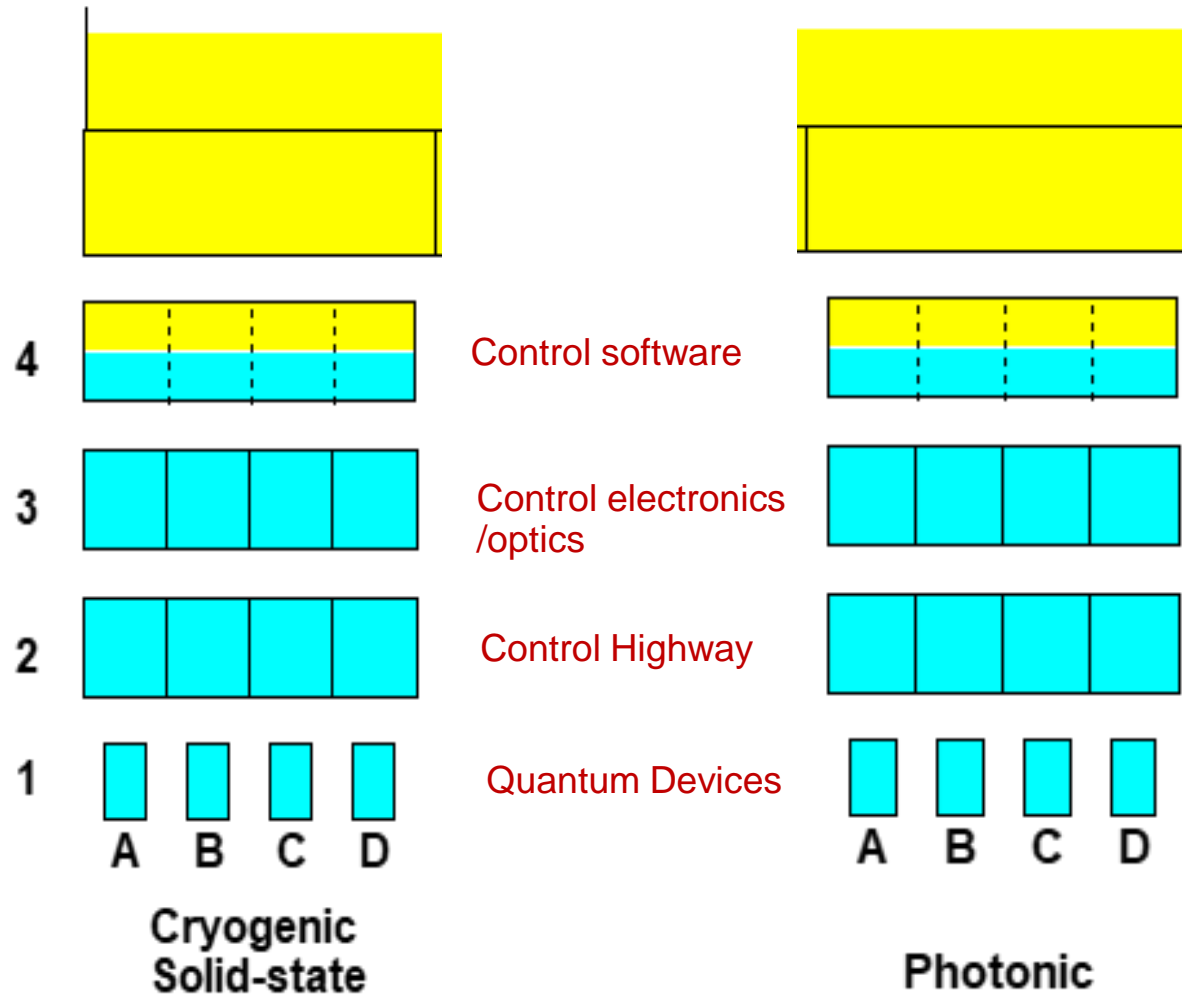
Multiple architecture families



# Hardware stack, two examples

Multiple layers

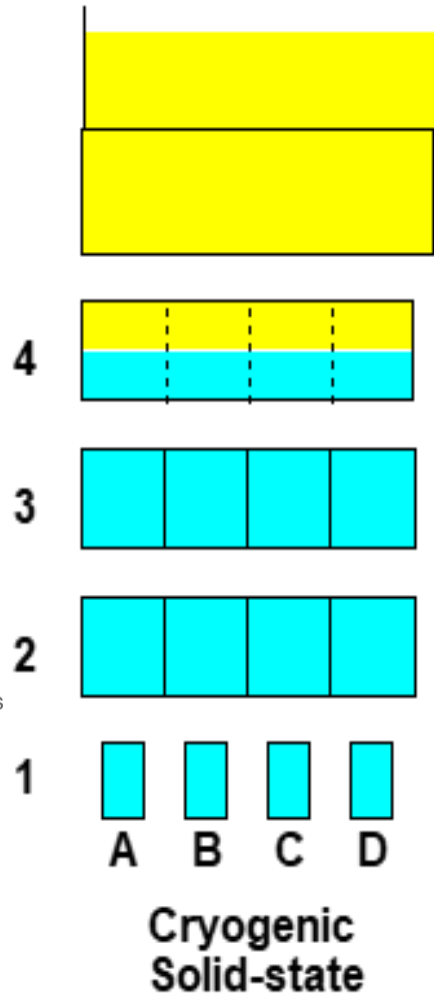
Multiple members per architecture family



# Hardware stack, two examples

Multiple layers

Multiple members per architecture family

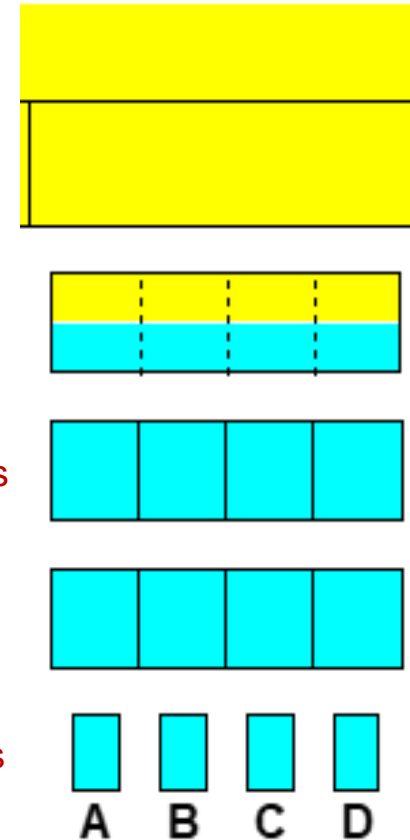


Control software

Control electronics /optics

Control Highway

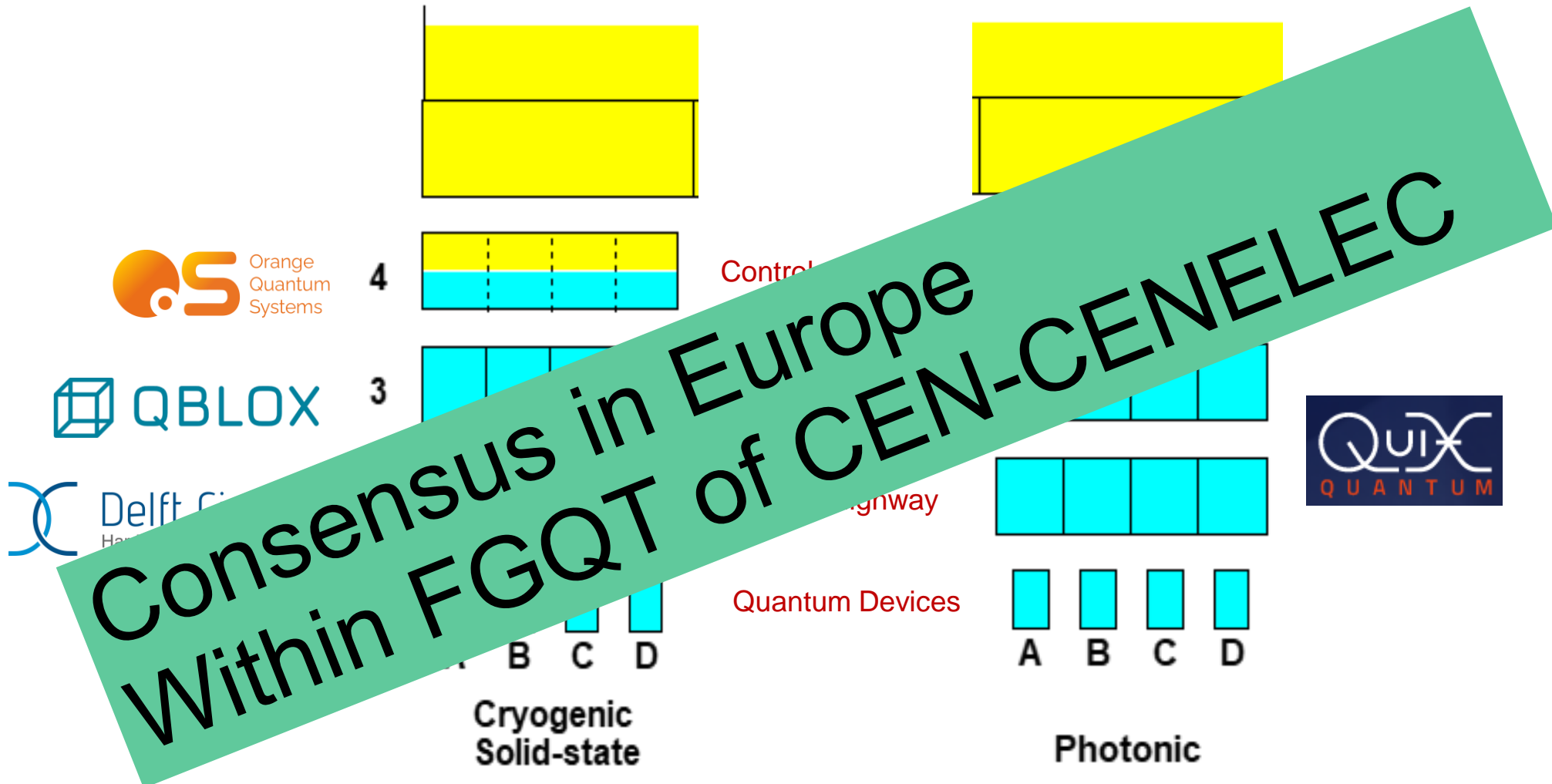
Quantum Devices



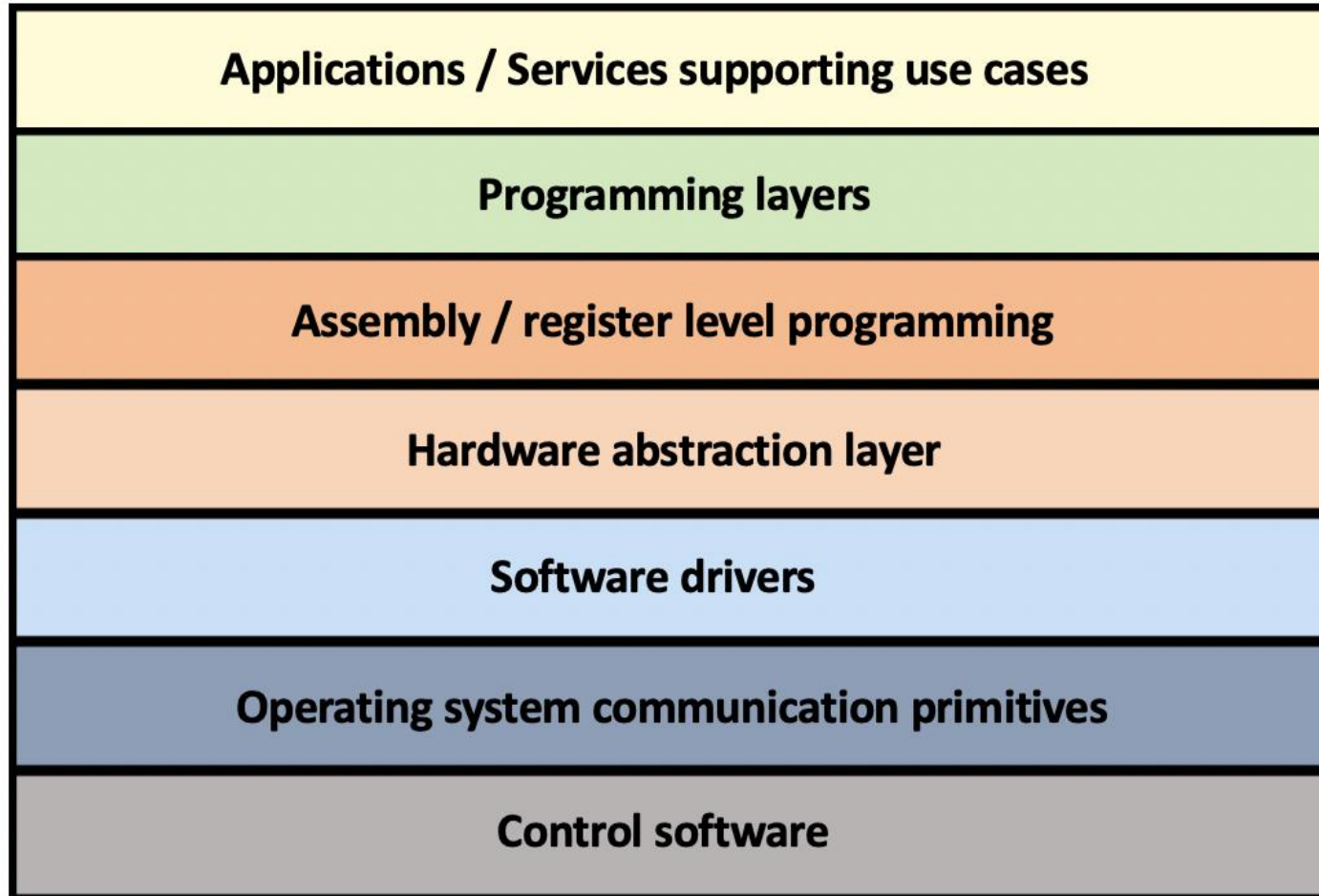
# Hardware stack, two examples

Multiple layers

Multiple members per architecture family



# Software stack



Currently under study, within CEN-CENELEC



# Next steps

- **Functional description of modules**
- **Functional requirements of modules**
- **Strong involvement of Dutch stake holders**
- **Shape the quantum future,**  
*(to support Dutch interest)*

