



Two of a kind: Using open standards to develop successful digital twin strategies

How OCF's secure IP device framework helps drive interoperability between digital twin systems to enable enhanced data-driven decision-making in smart cities.



November 2024

Open connectivity
foundation member
confidential

Benefits of an open standards approach

“Access to shared building blocks and greater interoperability, including through open standards, could help a wider range of businesses and academics deliver these kinds of innovations more quickly, cheaply and effectively. Enabling innovators to bring together multiple organizations’ systems and data securely and easily could unleash a realm of new and more valuable use cases.”
 – UK Government

In recent years, the UK government launched The National Cyber-Physical Infrastructure (NCPI)⁶ program, which aims to develop a collaborative ecosystem for cyber-physical systems. This is not intended to be a single, centralized system, but instead, a network of applications for particular use cases that come together into a connected ecosystem, underpinned by interoperability.

Open standards are critical to deliver the interoperability required to deliver such projects, as well as maximize the benefits from using digital twins and ensure that smart cities are people-centric, secure, interoperable, and scalable.

An open standards approach also helps to ensure trust, identity, privacy and security (TIPS) across the entire digital twin ecosystem, with confidence in distributed data through federation.

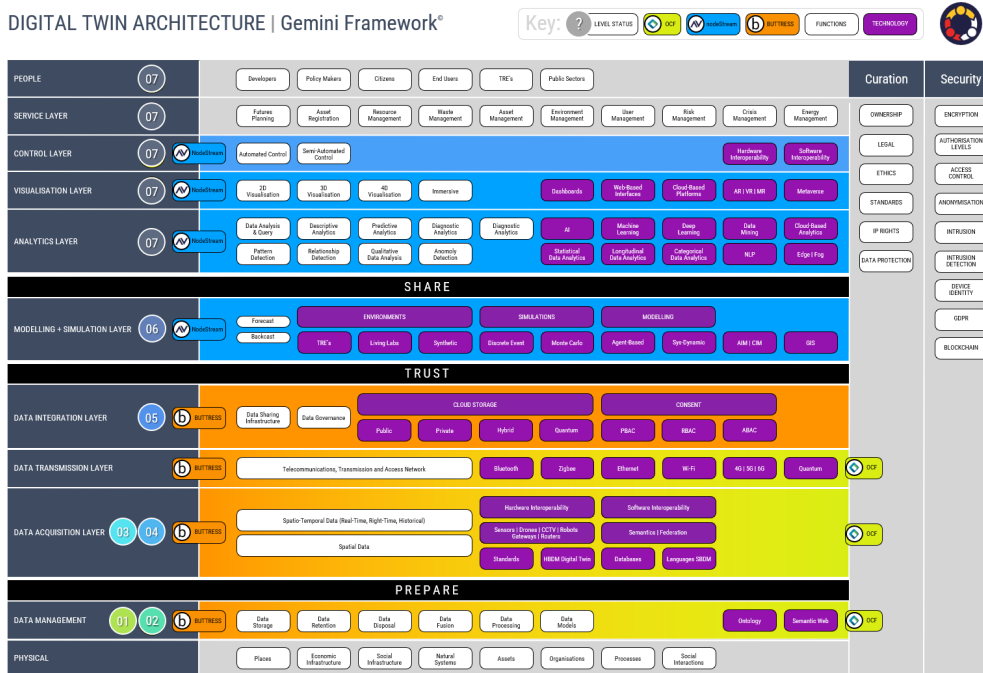


Figure 2: Example of how the Gemini Framework could be mapped

Through open standards, smart city stakeholders, manufacturers and developers benefit from a common framework for secure interoperability that can be replicated across numerous use cases. In this way, open and interoperable standards help to deliver assurance that systems will work as expected, safeguard vendor neutrality and enable ethical behavior by removing bias.

Ultimately, an open standards approach enables smart city stakeholders to confidently and safely implement interoperable digital twins, unlocking more informed decision-making for safer, more cost and energy efficient, productive and environmentally friendly cities.

Security and interoperability are cornerstones of the OCF Secure IP Device Framework, which offers a standardized solution to ensure interoperable, reliable, and secure connectivity.

⁶ <https://digitaltwinhub.co.uk/organisation/national-cyber-physical-infrastructure-ecosystem/>

