

WISE-PaaS

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Campus IoT Integration Platform

NYCU has had a longstanding collaboration with Advantech in jointly developing IoT technologies and promoting industrial development. In the current initiative, generously supported and sponsored by the alumni-owned company, we've introduced the **WISE-PaaS Industrial IoT Cloud Platform**, referred to as the **WISE-PaaS platform**. It is deployed in our campus environment as a private cloud model. Beyond its support for InnoWorks student competitions and various research teams on campus, we are also exploring its application in the context of institutional governance.

The **WISE-PaaS platform** is an industrial-grade IoT integration service platform, offering various application development environments, including data processing, analysis, and management. Its primary objective is to seamlessly integrate IoT environments from the device end to the analysis end, all under a single management platform. With the assistance of the Advantech team, our local **WISE-PaaS platform** has successfully implemented the **TwinSpace** architecture. This architecture efficiently divides different teams into multiple tenants, enabling differentiation and effective management of service usage for each team.

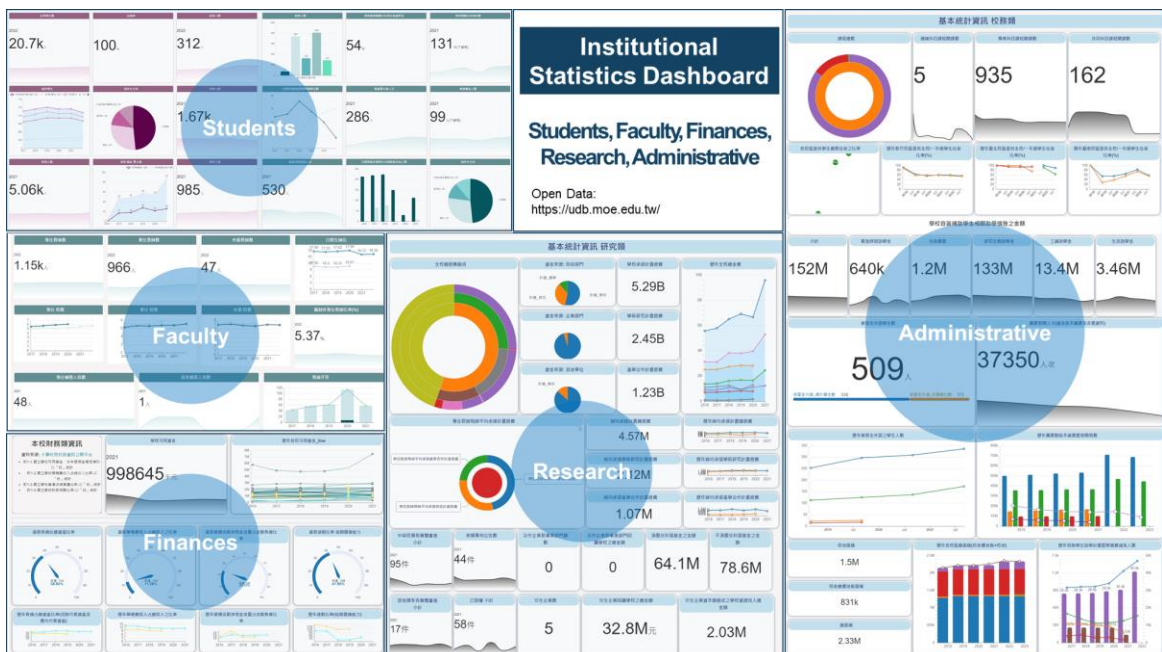


The WISE-PaaS Platform Architecture (Image source: Advantech)

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Unlike student competitions, which often focus on applications related to IoT sensors, CIRDA primarily utilizes the **WISE-PaaS platform** to develop institutional decision support dashboards. Through the **WISE-IoTSuite/DataInsight** data integration service, it assists in institutional data collection and ETL processes, shortening data processing cycles by creating automated data processing models on the platform. Furthermore, it integrates DataInsight datasets into **WISE-IoTSuite/BI** business intelligence services to develop and deploy visual dashboards, with the goal of providing real-time institutional decision support information. CIRDA is progressively incorporating more essential reference data for institutional decision-making.

To serve as a reference point for evaluating the performance of the High Education SPROUT Project, we have initially utilized open data from the Ministry of Education to create an institutional statistics dashboard. This dashboard highlights key institutional indicators. In the early development phase, we have established five core information panels, covering aspects related to students, faculty, finances, research, and administration.



Institutional Statistic Dashboard under development