

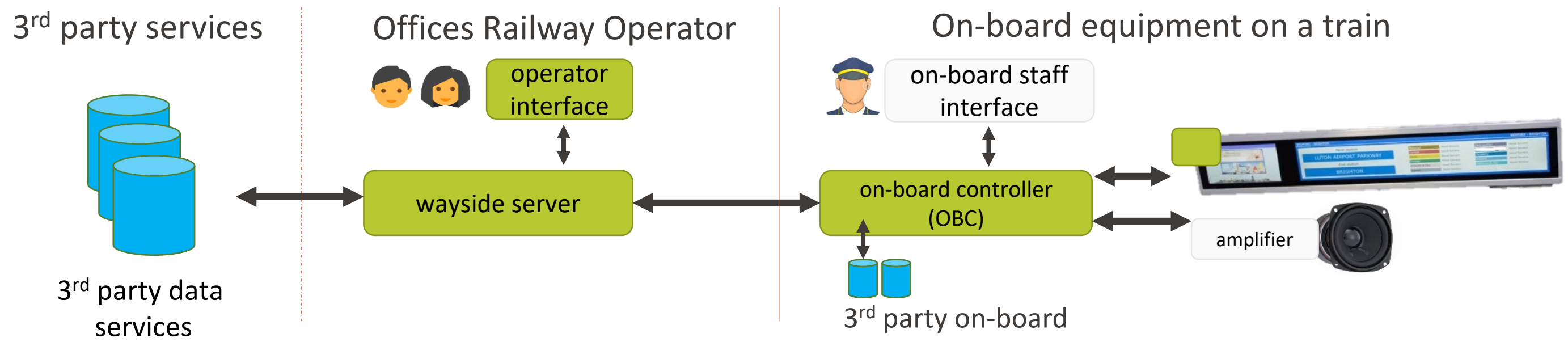
Passenger Information at Scale

GOALS

Televic Rail operates in the niche market of designing, manufacturing and maintaining on-board Passenger Information systems for rail vehicles.

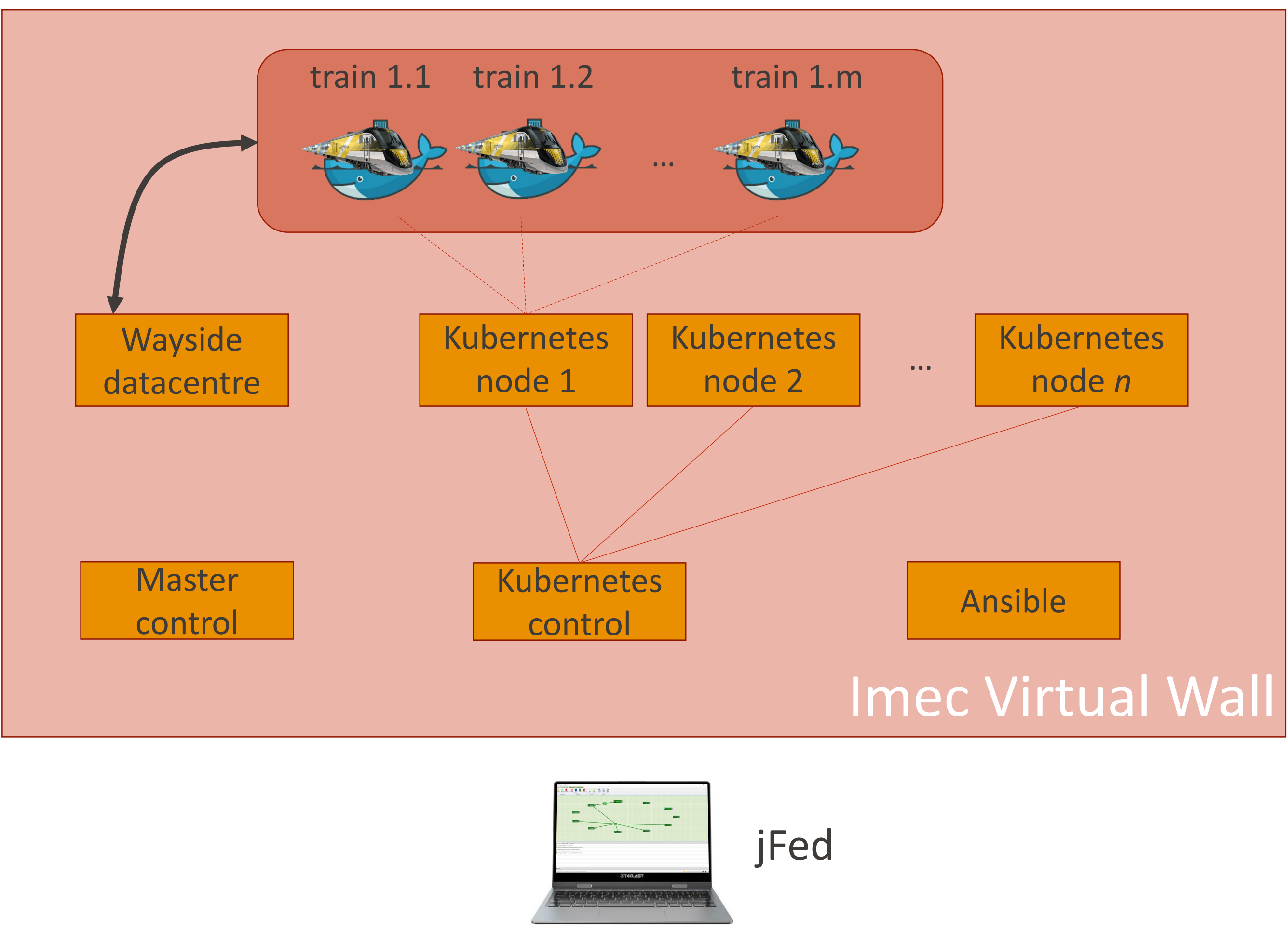
With a first set of functional tests already carried out, Televic Rail took the opportunity to use the Fed4FIRE infrastructure to evaluate the behaviour and performance of novel passenger information system components beyond the current in-house testing scale.

CHALLENGES



On-board passenger information systems are quickly evolving from standalone systems to large scale interconnected distributed systems. Testing becomes ever more complex due to **increased complexity and scale**.

DEMO SETUP



RESULTS

Test and tooling lessons learned

- Efficient resource and topology definition in jFed
- Ansible for deployment
- Efficiently scaling up tests: Kubernetes, Docker
- Behavior-driven test approach via Cucumber/Gherkin, driving the tests via python scripts
- SUT only to be minimally adjusted to the test environment; test automation for larger scale to be approached in a slightly different way for optimal performance.

Support/knowledge of testbed owner is a crucial accelerator in setting up resources and tests efficiently.

MORE RESULTS

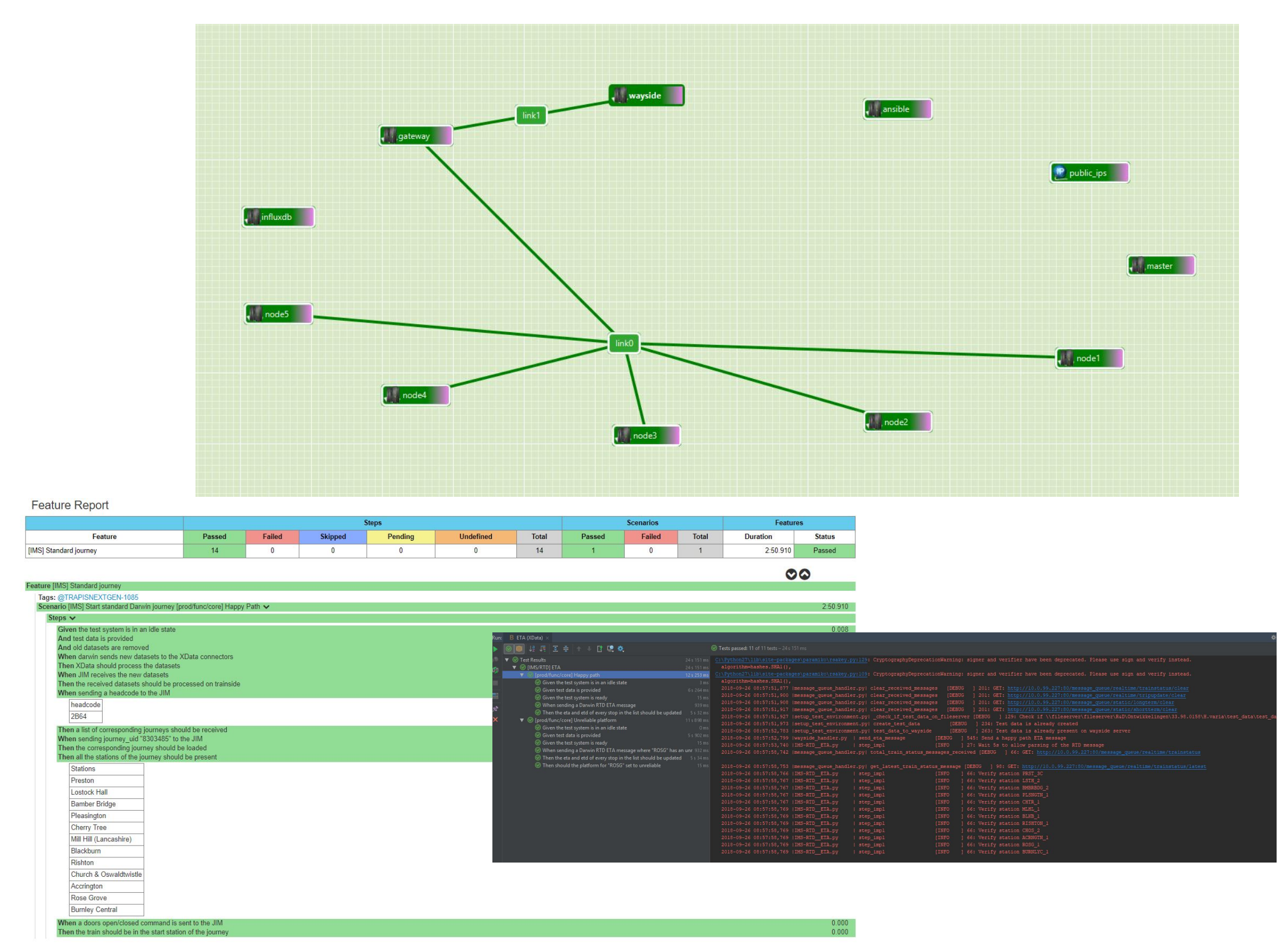
Solution under test

Small scale

- Functional improvements were made

Large scale

- Wayside server of the newest generation of our passenger information solution has the capability to support large fleets
- Even under stress conditions (e.g. «all trains starting at the same time») a standard server is capable of supporting an entire fleet



CONCLUSIONS

For Televic Rail, **Fed4FIRE+ provided the test environment as well as the knowledge** to scale up our tests.

At small scale, the test automation was developed and early functional tests were done. Through a combined docker/Kubernetes approach, the **large-scale testing could efficiently be organized**.

The entire process allowed us to optimize the functional behavior of the solution, as well as to prove and to better determine performance at scale.

POST MORTEM

The Fed4FIRE+ federation offers a large variety of testbeds. Tools such as jFed support setting up basic configurations and accessing remote resources – they are easy to learn and as a result make testing environments very accessible.

Another important asset, «**knowledge/experience of the consortium with setting up large scale tests**» is less clearly visible from the project website or project offer, but is certainly present. For us, apart from the technical tests, learning about methodologies and tools has been very relevant.