

GOALS

- Leverage Tengu cloud-based platform functionalities and open-source frameworks and generate a health platform (iwelli Tengu) at a comparable quality with professionals' ehealth web platforms.
- Generate fully automated service (scripts).
- Test and compare the iwelli Tengu instantiation versus the FHIR Google platform

CHALLENGES

There is a growing amount of Big and Heterogeneous data in the healthcare industry:

Medical Data: Electronic Health records, Genomic sequencers, Devices such as MRIs, x-rays and ultrasounds,

Real World Data: Sensors and wearables, Mobile Apps

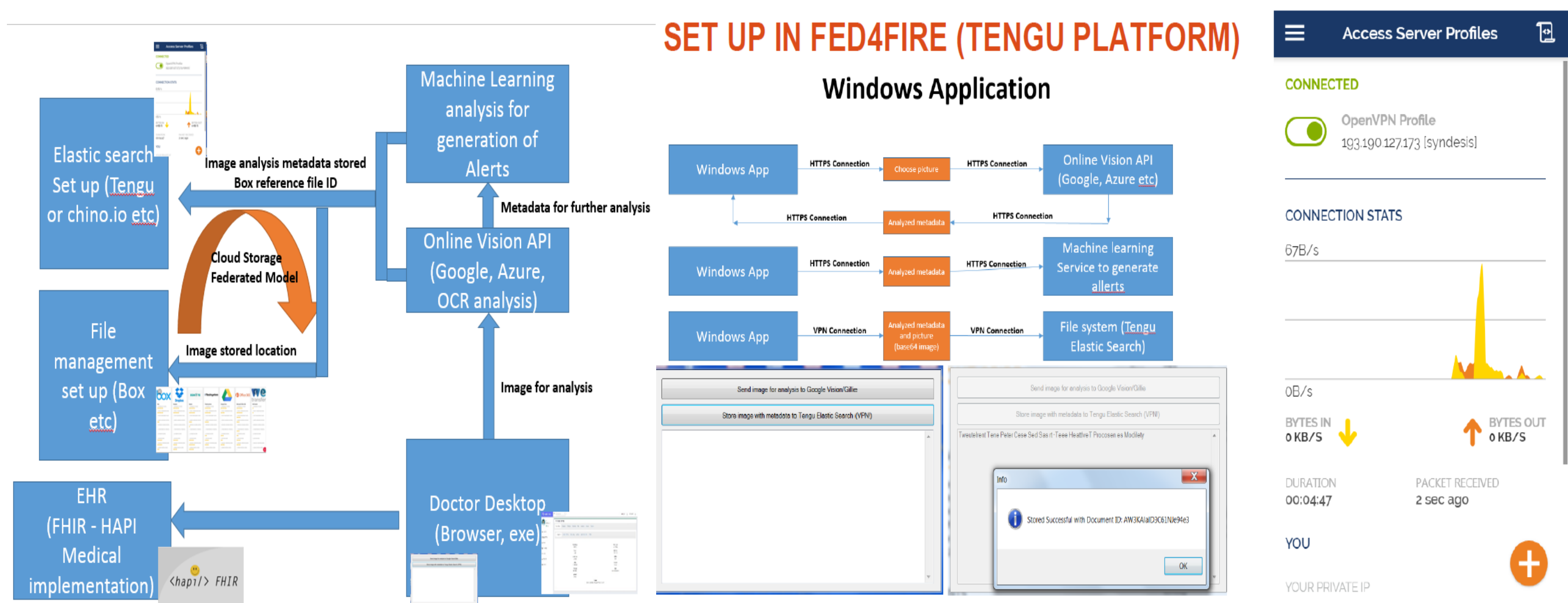
This has made inevitable the adoption of big data management techniques to improve the quality of healthcare delivery.

DEMO SETUP

We set up in Tengu an instantiation of the HAPI FHIR EHR platform.

We developed software scripts to automate the process of analysis and storing images.

We implemented a **cloud storage federation model integrating multiple cloud storage providers and external APIs.**



RESULTS

We produced a **set of outcome measures that was used as endpoints in** measuring the effectiveness of the applications we used in the Tengu platform.

We **performed tests to the deployed HAPI server** in the Tengu platform in order to compare the effectiveness of the platform compare to the Google Cloud FHIR platform relative to end-to-end message travel delay times.

We **developed a software** that allowed us to send data into the FHIR server synchronously and asynchronously. In this way we emulated multiple current user access.

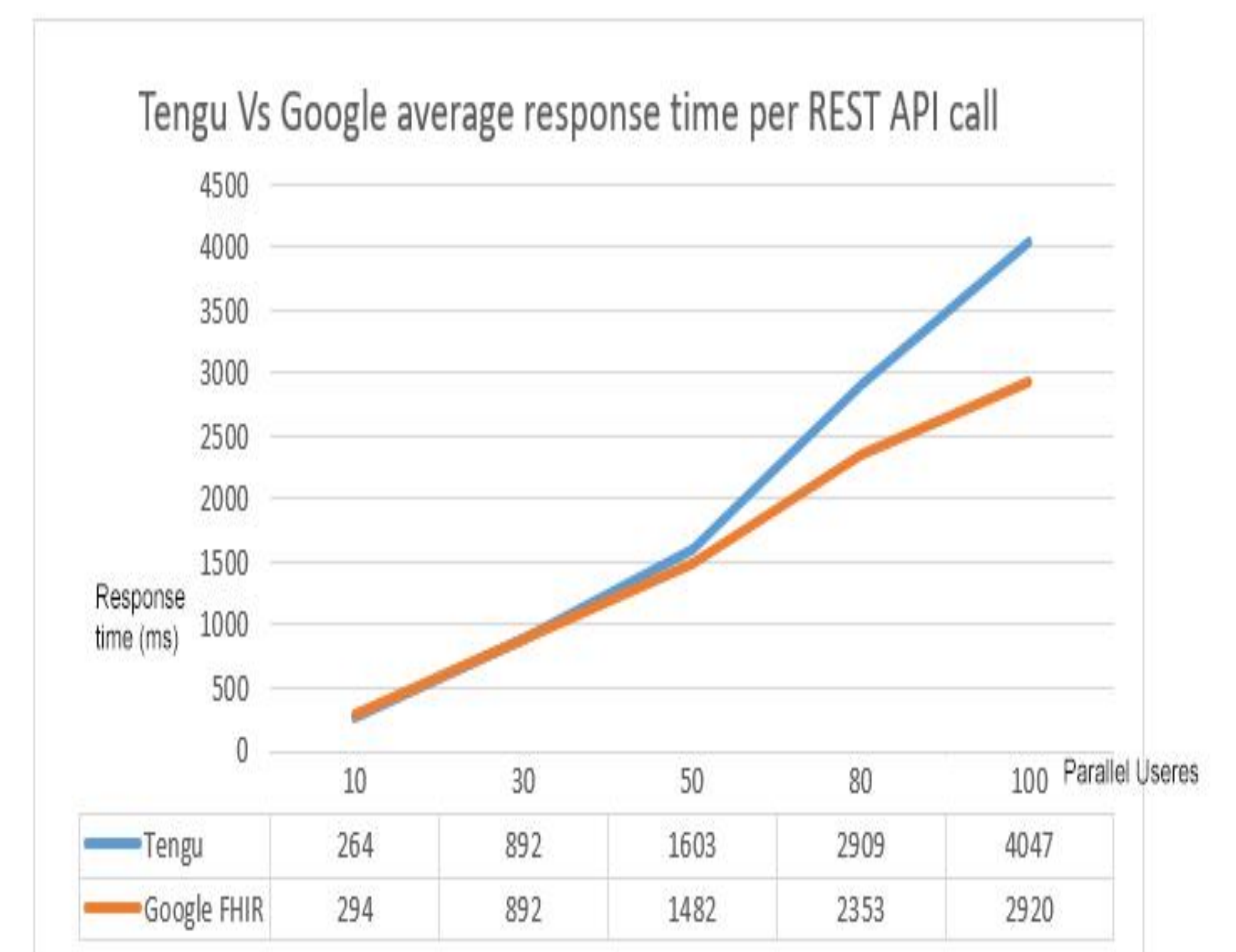
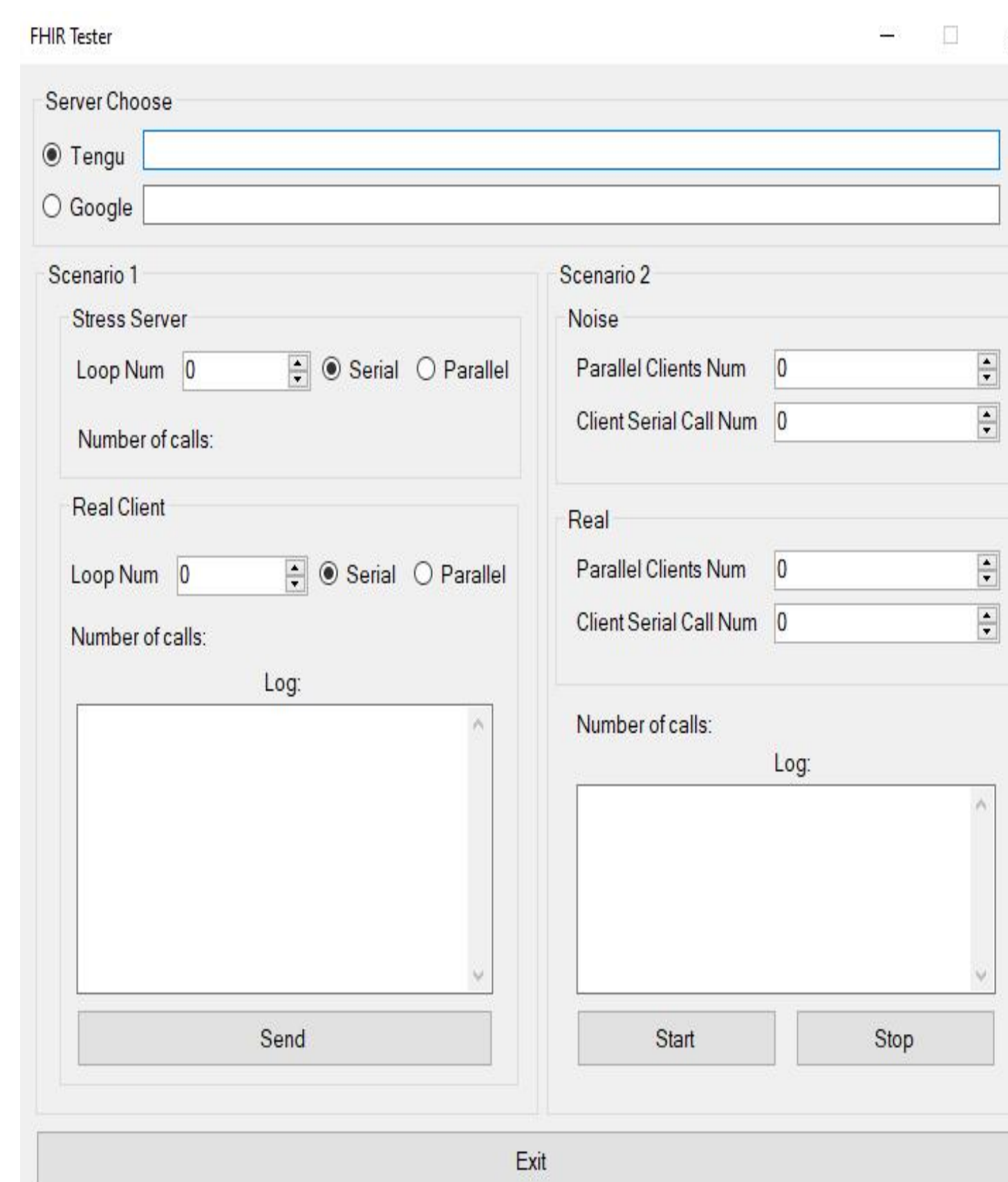
We **measured end-to-end message travel times in the presence of variable platform loads in the background.**

MORE RESULTS

Five stress testing scenarios have been simulated in both platforms (HAPI-Tengu, GCP) using the testing software.

We incrementally increased the number of parallel simultaneously users, while we measured the REST API call response, for each scenario and platform.

Although more thorough investigation into more performance characteristics will help to further validate the platforms, the first tests showed that the HAPI server performance above all is a good fit for SMEs for supporting EHRs cloud-based implementations.



CONCLUSIONS

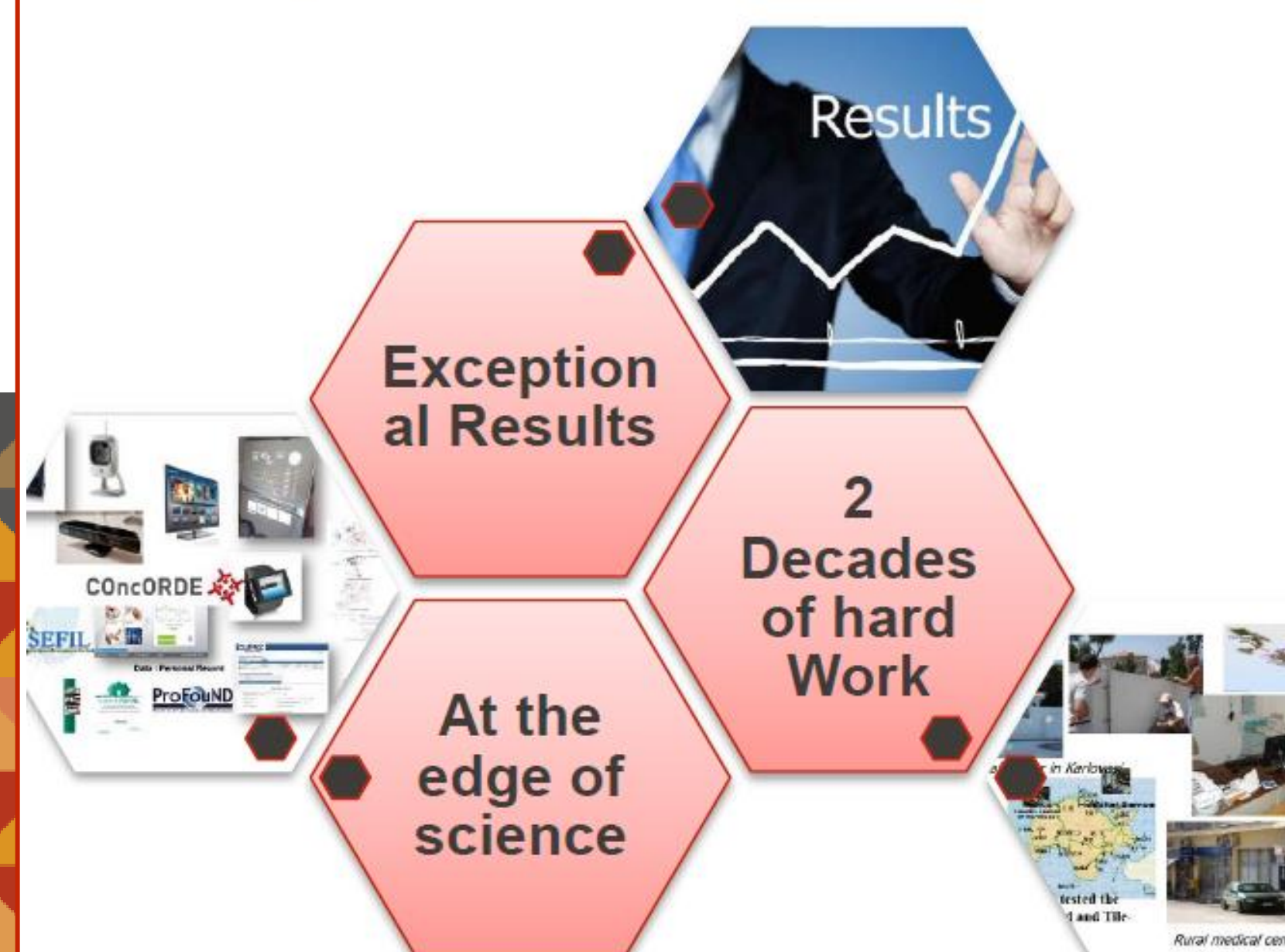
The iwelli Tengu implementation (open-source implementation) is a reliable solution to work, build and scale professional ehealth services with this.

With Fed4Fire experimentation we managed to:

- Automate the digitalization of some forms of files and images stored in the clinic.iwelli.com platform
- Accelerate the decisions taken to implement open source EHR services.

SYNDESIS LTD – INTELLIGENCE IN HEALTH

Background and Motivation



Synthesis Ltd – a Spin Of company of NCSR D

Contact us at:

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Iwelli portal:
<https://clinic.iwelli.com/>