



SMART CITIES

# **Eridanis: A startup growth story enabled by FIWARE**

With the contribution of



**FIWARE - OPEN APIs FOR OPEN MINDS**

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## Challenge & Context

Starting up a tech company these days is far from simple, unless one can leverage advanced technologies giving a kick start to the initial precarious stages. This is what happened when Eridanis discovered FIWARE and its catalogue of Open Source software. From the outset, [Eridanis](#) believed in the philosophy of returning data ownership to the final user which is at the core of the NGSI<sup>1</sup> protocol. Now, as Gold Member of FIWARE Foundation, Eridanis has managed to work for a variety of projects and corporations consistently utilizing FIWARE technology.

Eridanis was established in 2016, the same year as FIWARE, a happy coincidence. Especially in the early years of a freshly founded company like Eridanis, leveraging a known brand and a trusted Open Source software can help secure contracts with leading customers and public administrations. **Thanks to FIWARE, Eridanis was able to work with [Nice Côte d’Azur metropolis](#), Noisy Le Grand, and the Island La Réunion – for the latter project receiving congratulations from the French Prime Minister, Jean Castex, and the President of the Western Coast Territories** (known as TCO).

Leveraging a widely applicable and comprehensive technology such as FIWARE does not come overnight, but it is worth the investment.

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<sup>1</sup> The current version of the specifications of the FIWARE NGSI API are the FIWARE NGSI-LD API specifications. In 2016, the European Commission published “The 2016 Rolling Plan for ICT Standardisation”, in which it requested ETSI create an ISG (Industry Specification Group) aimed at the definition of a standard Context Information Management API with FIWARE NGSI as candidate. ETSI created this dedicated ISG at the beginning of 2017 resulting in a new standard, NGSI-LD, in November 2018. This API specification is compatible with the FIWARE NGSIv2 API specifications supported by the FIWARE/CEF Context Broker, adding new features bringing support to Linked Data.

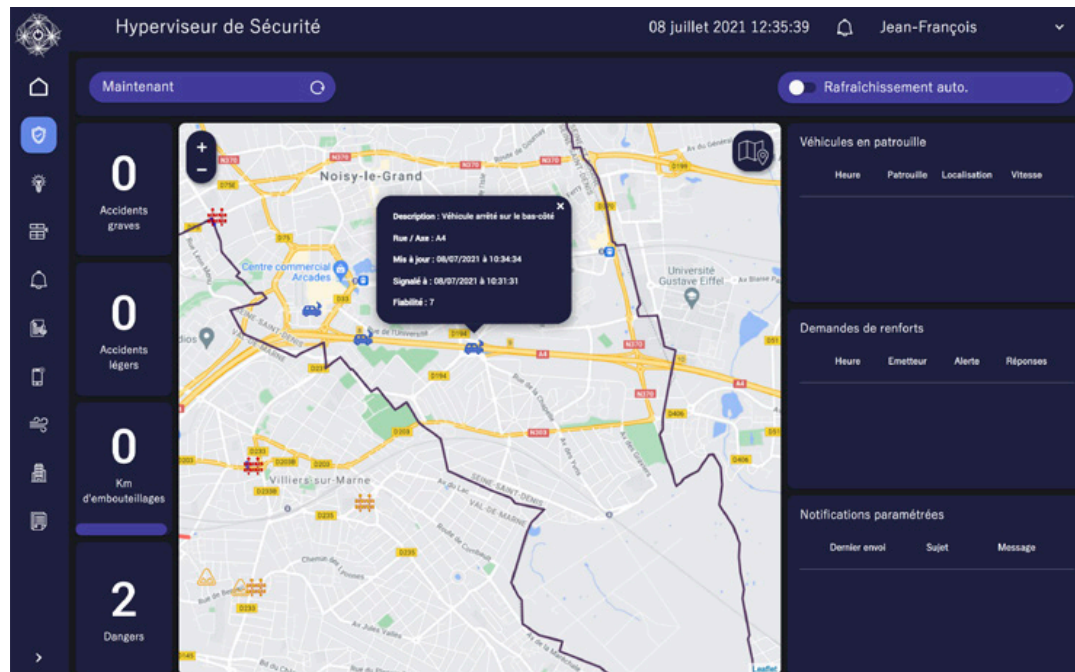


Figure 1 - Screenshot of Security Hypervision System

## Solution

The first joint meeting with FIWARE was in 2016, when Eridanis was scouting for IoT (Internet of Things) solutions for an initial project it had secured with the Nice Côte d'Azur metropolis. **After extensive technological benchmarking, Eridanis concluded that FIWARE was the most promising Open Source initiative to build a data platform for a Smart City.** Its vast catalogue of software blocks, the NGSI standard, and the data models initiative made it stand out from the alternatives.

That early assessment generated a positive business relationship between Eridanis and the Nice Côte d'Azur metropolis, which still endures to this day. From September 2017, Eridanis supported the metropolitan IT department in setting up its FIWARE platform. When turning operational back then, it assured the provision of various datasets in different domains, accessible through an API in NGSI V2 format,

the heart of which is an Orion Context Broker<sup>2</sup> and other components of the FIWARE catalogue. Eridanis maintains the system, regularly adding new datasets to the advantage of the metropolis and its external partners.

A turning point came at the end of 2018, when Eridanis became a Gold Member of FIWARE Foundation. The company accompanied the Nice Côte d'Azur metropolis to the Smart City World Congress in Barcelona, and a few weeks later to the FIWARE Global Summit in Malaga, where the decision to join the foundation was taken. Thanks to the Gold Membership level, FIWARE connected Eridanis with a call for tender for the creation of a new data traffic management system, which Eridanis won together with its partner [Spie City Networks](#). The backbone of this new project, started at the end of 2020, is the city's FIWARE NGSI API. Simultaneously, Eridanis developed an exclusive partnership with [Waze](#). Traffic information from Waze is fused through FIWARE with data coming from physical traffic counting sensors, or from other traffic data providers, such as Here or TomTom.

Another public administration is working with Eridanis thanks to FIWARE and the NGSI protocol: In 2020, Eridanis was selected by the **city of Noisy le Grand, a Parisian suburb, for the implementation of its data management platform**. Eridanis is currently running a pilot project involving three air quality measurement stations, which have been used for several months by the municipal Urban Supervision Center. A second prototype concerns the management of buildings for which the city is in charge of (gymnasiums, school canteens, etc.), to improve electricity consumption, water, heating, or access control. It is currently operational and allows assessment of the relevant sensor streams, including air quality, water consumption, physical presence and door opening sensors. These projects are gradually being integrated into the municipal data platform architecture, based on the fundamentals of FIWARE.

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<sup>2</sup> Orion Context Broker allows you to manage the entire lifecycle of context information including updates, queries, registrations and subscriptions. It is an NGSI-LD server implementation to manage context information and its availability.



Recently, Eridanis worked for the innovation process of the **West Coast Territories** (known as TCO), and more precisely the **Island La Reunion**. Eridanis was praised for the development of the project “definition of an ecological and industrial transition platform”, for which Eridanis advocated the use of a standard architecture based on FIWARE. The company received the congratulations of the French Prime Minister, Jean Castex, and the President of the TCO, for the development of this project and its participation in the granting of a French government subsidy.

## How it works

To operate more efficiently and faster with this kind of customers, Eridanis has developed a standard offering for a master plan of a Smart Cities based on an architecture with many components of the FIWARE catalogue, with the Orion Context Broker<sup>3</sup> acting as the main pillar of the solution. This offering has been made available through the [UGAP](#) (Union des Groupements d'Achats Publics), a privileged vector for public procurement in France, facilitating investments by urban communities aiming to advance in the area of smart city and digital transformation.

The solution has evolved throughout the various projects and currently offers a solid base, able to adapt to many applications very quickly thanks to the flexibility and openness provided by the NGSI protocol as standardized by FIWARE. The architecture is shown in Figure 2. The [ElasticSearch](#) can be replaced by [CrateDB](#) to store data history. The platform can be deployed to [Kubernetes](#) on any cluster.

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<sup>3</sup> Orion Context Broker allows you to manage the entire lifecycle of context information including updates, queries, registrations and subscriptions. It is an NGSIv2 server implementation to manage context information and its availability. Using the Orion Context Broker, you are able to create context elements and manage them through updates and queries. In addition, you can subscribe to context information, so when some condition occurs (e.g. the context elements have changed) you receive a notification. These usage scenarios and the Orion Context Broker features are described in this documentation.

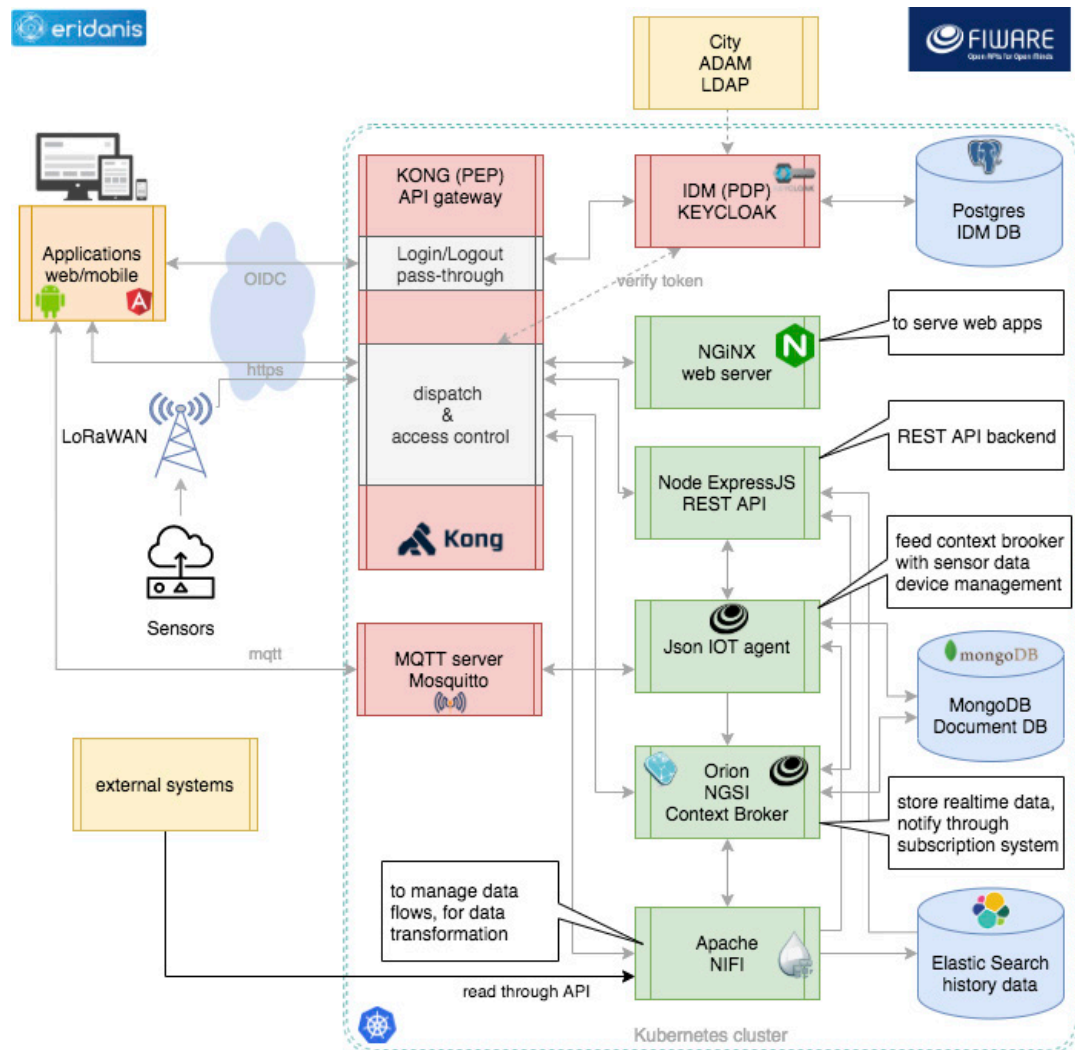


Figure 2 - Architecture

This core architecture is then adapted to each project specifically, accommodating for different industry domains, cities and territories. Eridanis strives to use the FIWARE defined [Smart Data Models](#) (Further information can be found on [Github](#) and [fiware.org](#)) within projects, to drive clients toward standards as much as possible whilst ensuring interoperability.

## Benefits & Impact

Thanks to these projects, its active participation in FIWARE, and its core platform, Eridanis is now in contact with several urban communities to support them in their digital transformation, with varying degrees of depth.

Aware of the possibilities that are also available in the field of industry, Eridanis also intends to offer support for digital transformation, and the implementation of data management solutions, based on a FIWARE architecture, to stakeholders of the industry.

## Added value through FIWARE

The value added by the FIWARE Foundation is outstanding. With the advent of new computer technologies such as artificial intelligence, **the FIWARE Foundation's advocacy for interoperability, the elimination of silos, and the equitable sharing of data is invaluable**. It encourages players to maintain sovereignty over their data, without being dependent on a third-party service provider.

**Eridanis fully believed in the FIWARE Foundation's philosophy and strategic vision from the beginning**. Data is the new gold – and Eridanis intends to help municipalities and public administrations extract value from it and deliver it to the citizens wherever and whenever possible.

Eridanis has been a Gold Member of FIWARE Foundation for almost three years, while Eridanis' CTO, Alain Galdemas, is an individual member as well, having both contributed to the development of Keyrock, the IDM component of the FIWARE catalogue. Alain regularly attends the roadmap impacting FIWARE Technical Steering Committee (TSC) meetings in his role of the "Interface to IoT and 3rd systems" representative.

## Next steps

Eridanis intends to add support for ML (Machine Learning) and AI, and plans to present its platform on the FIWARE Marketplace in the near future.

Eridanis contributes to the evolution and evangelization of FIWARE and thus supports its wider adoption. It has been and continues to be a strong supporter of FIWARE Foundation and the technology FIWARE promotes and further extends.

## References

- [Nice Metropolis](#)
- [Noisy Le Grand](#)
- [TCO La Réunion](#)



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## Categories

**Domains (s)** eHealth, Smart AgriFood, Smart Cities, Smart Industry, Smart Mobility

**User (s)** Municipalities, Regions, Public Administrations, Gymnasiums

**Key words** Air Quality, Traffic Monitoring, NGSI-LD, Smart Data Models, IoT

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