



asia[®]



ASIA: an innovative technology, made to improve our environment.

ASIA: much more than a simple controller



ASIA (*Advanced System of Intelligent Aeration*) is an innovative algorithm for the **real-time management of the biological process** in wastewater treatment plants.

It is an economical and flexible tool, **unique on the market**, which **maximizes the purification yields** of each reactor, **minimizing the energy consumption** related to blowers and mixers and **reducing the operating costs**.



ASIA: for whom is it useful?

ASIA is a useful technology for **public Water Utilities** and **industrial companies** that produce wastewater, which can be treated with biological reactors.

Participating in a circular process, ASIA is a **sustainable tool** which is also useful to the community, as it brings direct and indirect benefits both in environmental and economical terms.

In its customized version, ASIA can also meet the needs of companies dealing with complex wastewater treatment related issues.



ASIA: how is it «different»?

- **ASIA is an algorithm working as a «digital biologist»: it makes complex analyses and manages in real time the aeration system of the oxidation** → **It is not** a supervision software / an automation software / a standard process controller / an «alternating aeration cycles» controller / a measuring instrument. **It is** instead an algorithm that operates with a «black box» logic.
- **A single measurement** → ASIA operates by analysing the trend of a simple, stable and reliable signal, the **RedOX**.
- **Independence of plant supervisor** → ASIA intervenes exclusively on the biological process and leaves the operator free to manage the rest of the plant with the existing tools and schemes
- **Minimum input, maximum output** → ASIA maximizes the purification yields and minimizes the energy consumption of WWT plants **at all times and conditions**
- **«Make the best of it»** → There is **no need for plant upgrades of any kind**, with ASIA the plants perform to the maximum, within the limits of their biological potential
- **Freedom of choice** → ASIA enriches and integrates other technologies, without excluding them
- **For everyone** → **The price of ASIA is very competitive**, by choice
- **Forever** → ASIA is a compact firmware that after the first application can be uninstalled, reinstalled and reconfigured remotely on multiple systems

ASIA: where to apply it?

ASIA can be applied to suspended biomass WWT plants of any size and intervenes exclusively on the oxidation station.

Inside the biological reactors the bacterial biomass feeds on the organic waste substance that contaminates the sewage drains, eliminating it and then purifying the water.

ASIA **constantly** analyzes the state of the biomass inside the oxidation tank and on this basis decides whether to accelerate or to suspend the process, adapting it to the real purification potential of the activated sludge.



ASIA: what to use it for?

ASIA is a «**digital biologist**» born to optimize the yield of activated sludge at every single moment, therefore **purifying as much as possible within the biological and physical limits of the reactor.**

ASIA intelligently controls aerators and mixers, using **only the energy strictly necessary to achieve its primary objective.**

It is a tool that makes it possible to **lighten the ecological footprint** of the purification activity both in terms of residual pollution and in terms of energy consumed, and therefore goes in the direction desired by the new European directive on urban waste water treatment.



Better water output

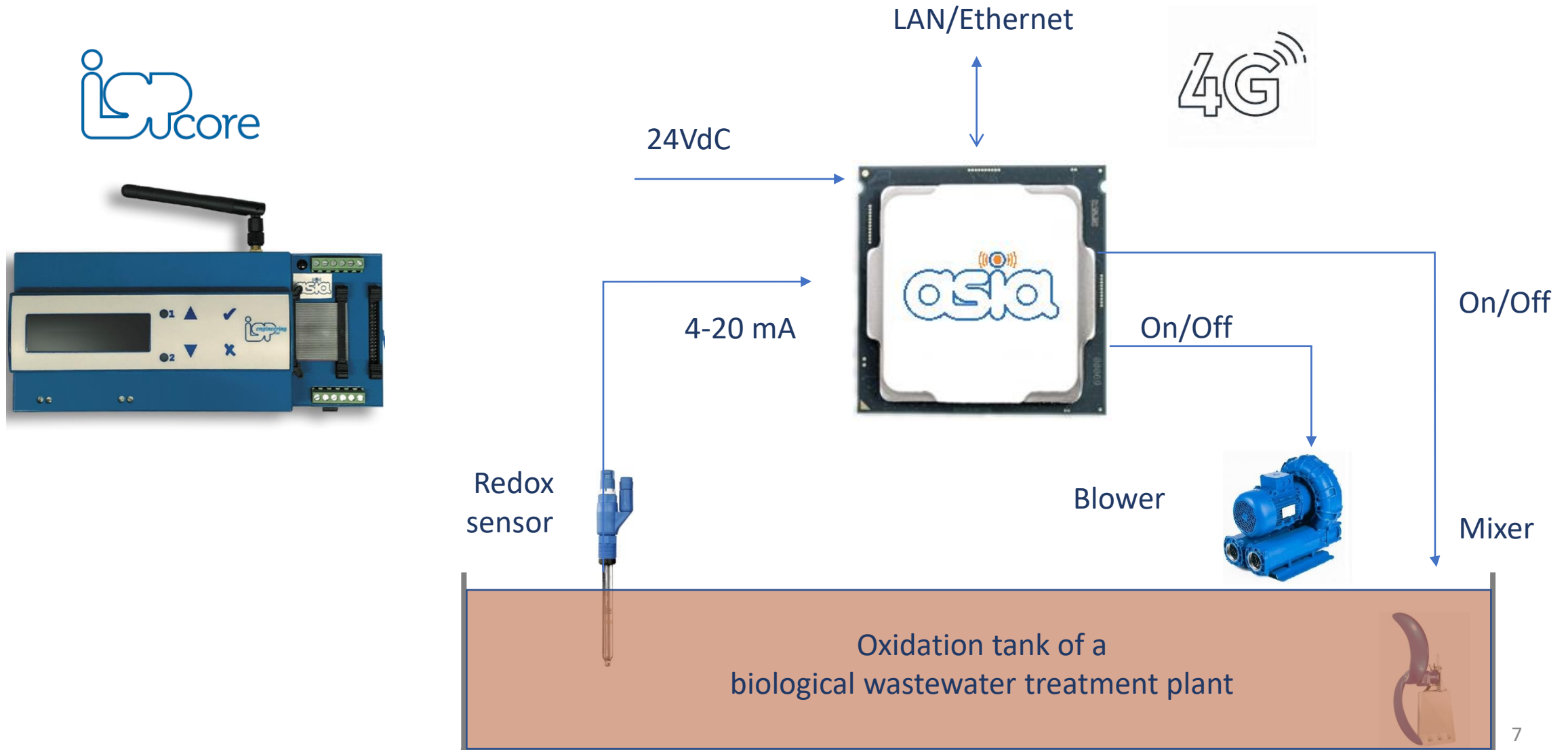


Reuse in agriculture



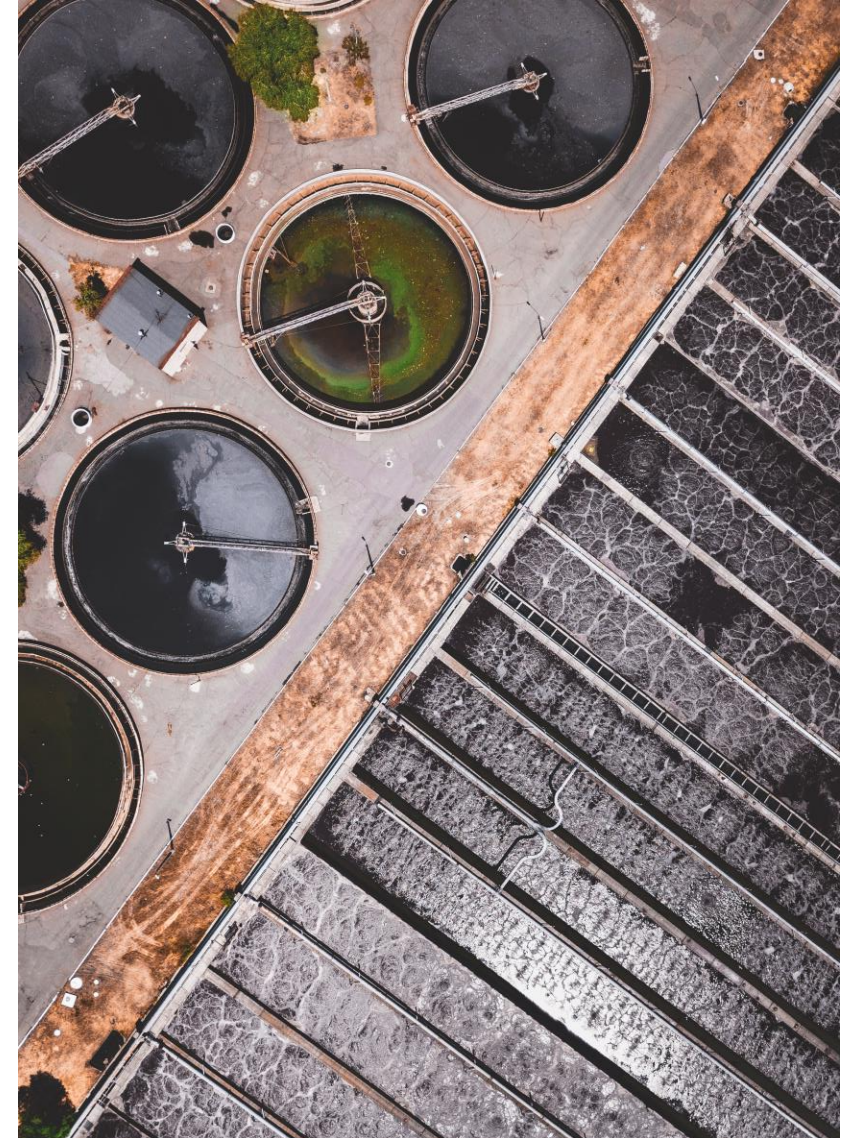
Purification process sustainability

ASIA: how does it work?



ASIA: why should you use it?

1. **Significant reduction of costs as result of a moderate investment**
2. **Improvement of biological process yields** thanks to the exploitation of the maximum potential of the existing reactors, **avoiding upgrades** (redox is the only requirement)
3. **Stable improvement** of the quality of water returned to the environment (total N) with respect of the discharge limits, even **with variable polluting loads**
4. **Very simple, flexible and powerful add-on**



1. Cost reductions



> 20%



No expensive plant upgrades required

Energy saving thanks to the efficient and effective use of blowers / mixers

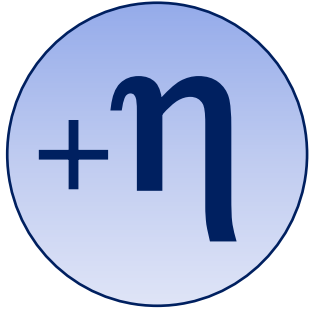
WWT plant **potentiality increase**

Moderate investment, quick return on costs

ASIA is applicable to reactors of all sizes.

It can quickly and flexibly increase the performance of small and / or difficult-to-manage plants and is therefore useful also on WWTPs which are going to be decommissioned, but are still in use.

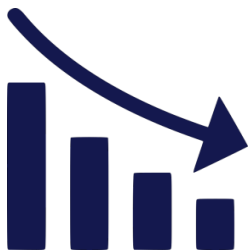
2. Yields improvement



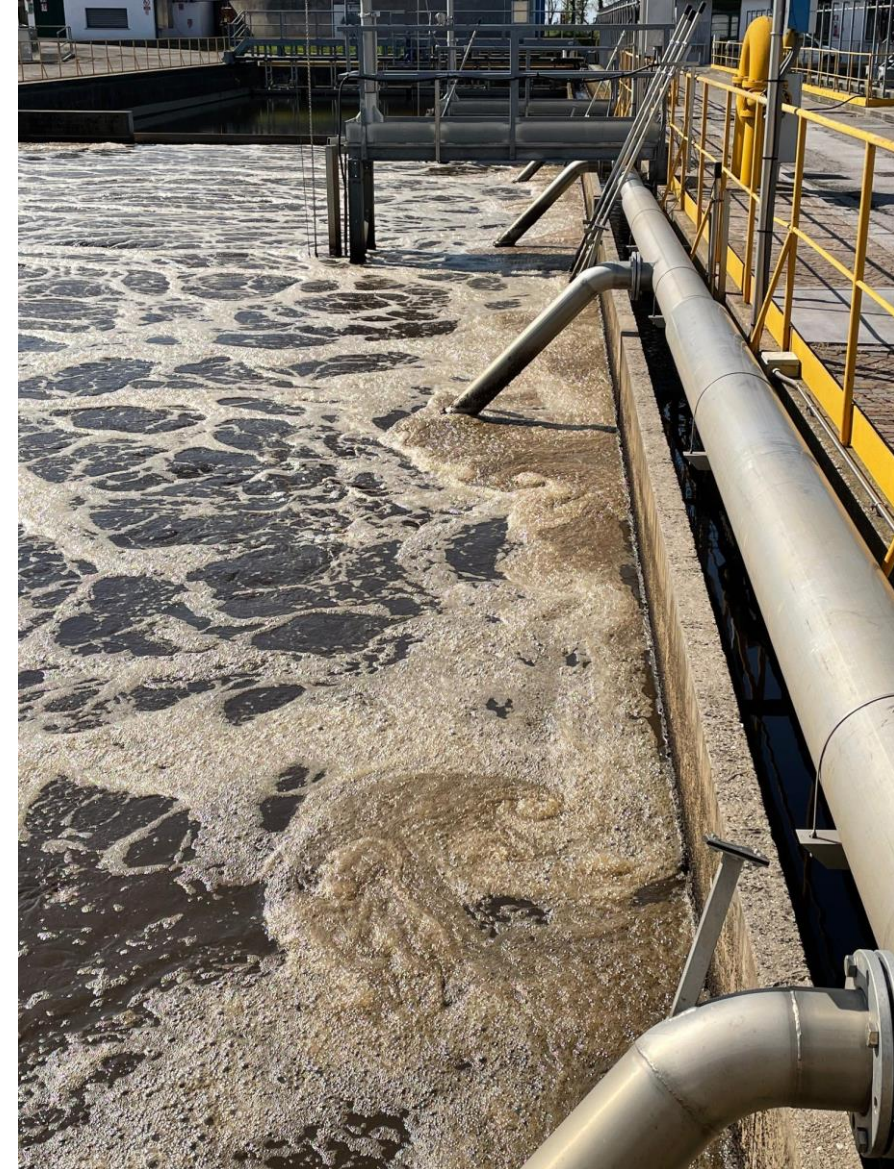
Greater **reduction of COD**
(Chemical Oxygen Demand)

> 2x

Greater **nitrogen reduction** in the
aeration tank thanks to the control
of biological reactions



Fewer samples and
laboratory control **analyses**



3. Guarantee of continuous control



Flexibility of the purification process also **with variable loads and conditions**

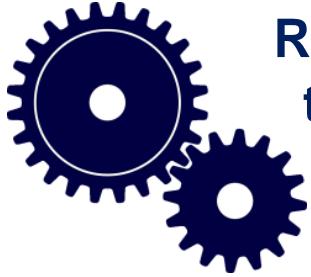
Stability of the purification **process** and **yields** over time

Optional **Remote System Maintenance Service (MDS)**

Optional **Automatic Anomalies Notification (NAA)**



4. Power and simplicity



**Reliable hardware,
tried and tested
software.**



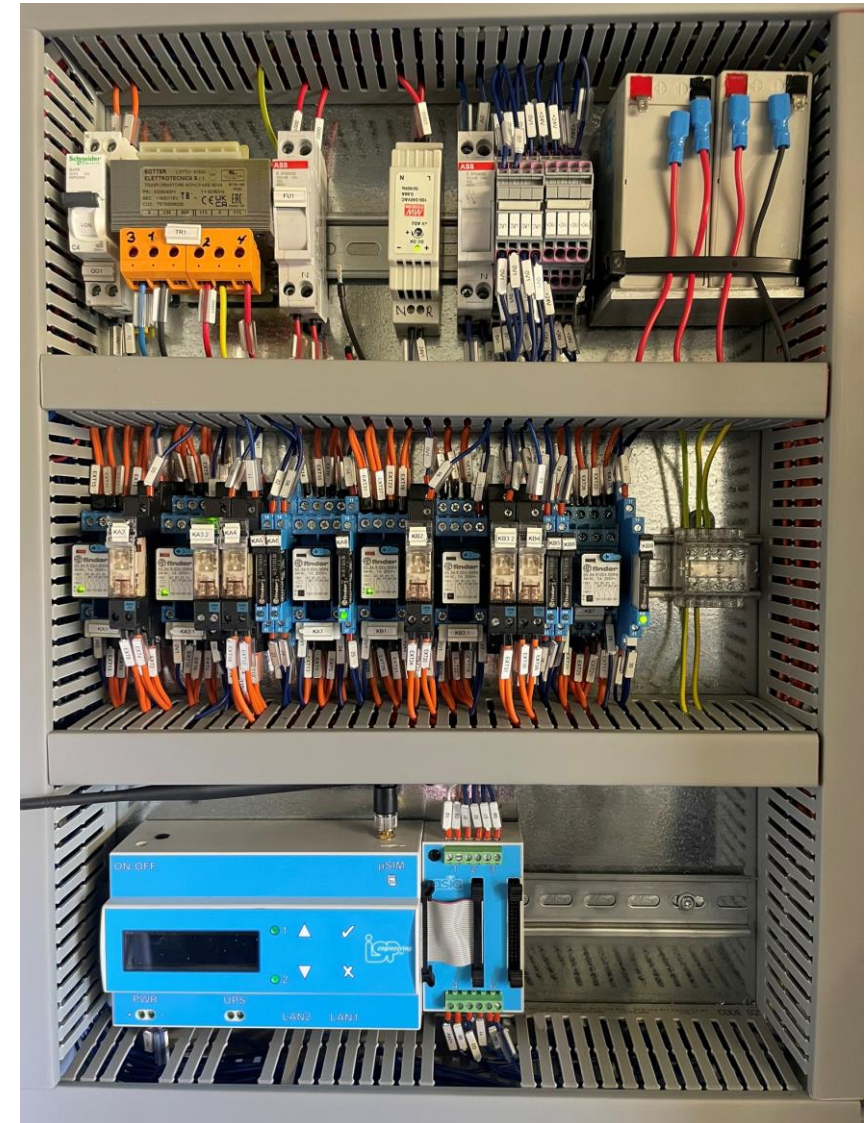
**A single measuring
instrument**



**For all types of reactors
(small, large, continuous,
batch, etc)**



**Quick installation
(2 days)
Quick results
(2 weeks)**



ASIA: officially certified results



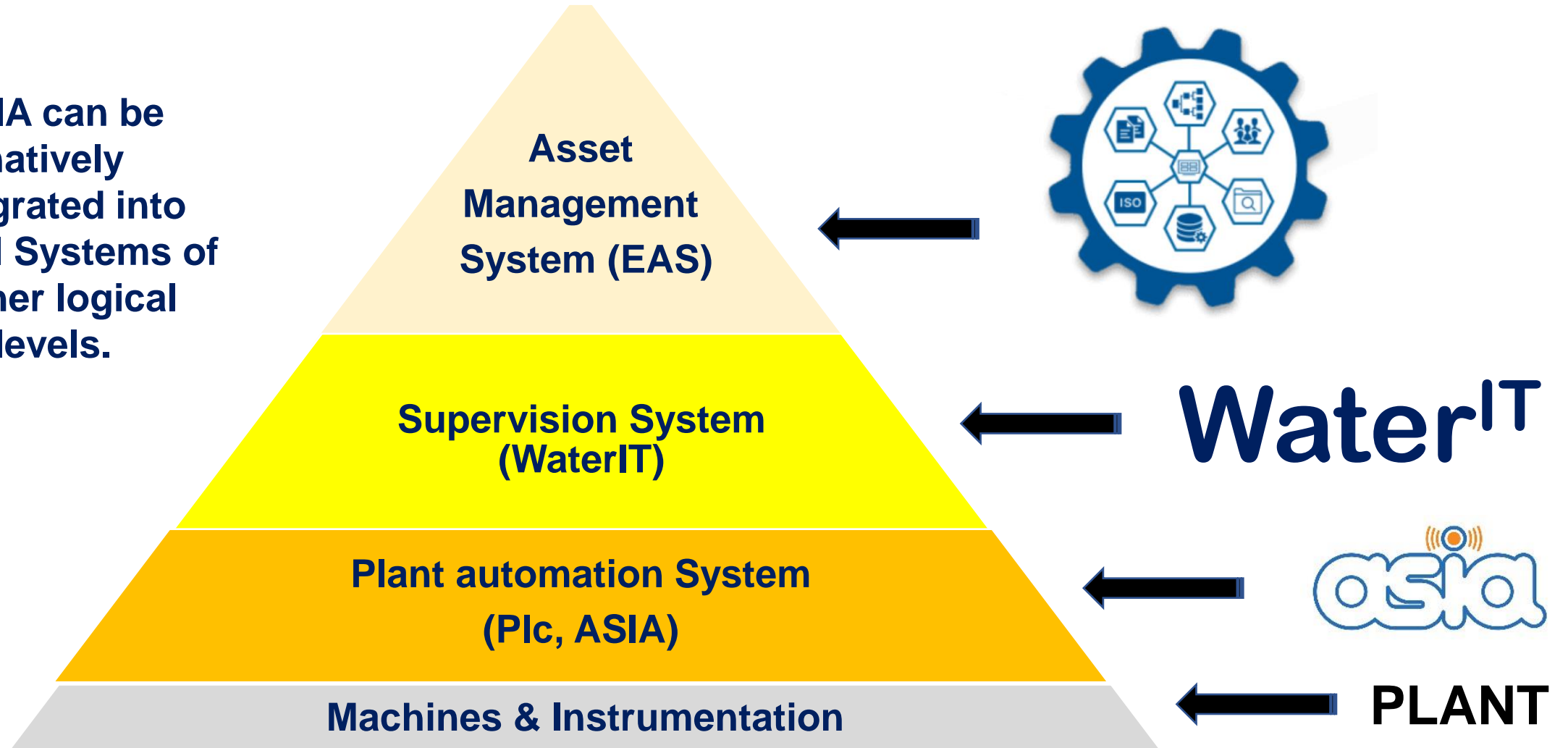
Conclusions of the Technical Report signed by a Third Party (CAFC), available on request:

"In a simple and fast way ASIA can be used in all different types of biological oxidation processes, to produce with modest investments significant reductions in operating costs. The application of ASIA to biological purifiers produces significant savings in energy costs, greater reductions in nitrogen and COD, greater flexibility and stability of the biological process, good automatic management of anomalies and continuous control of depurative yields."

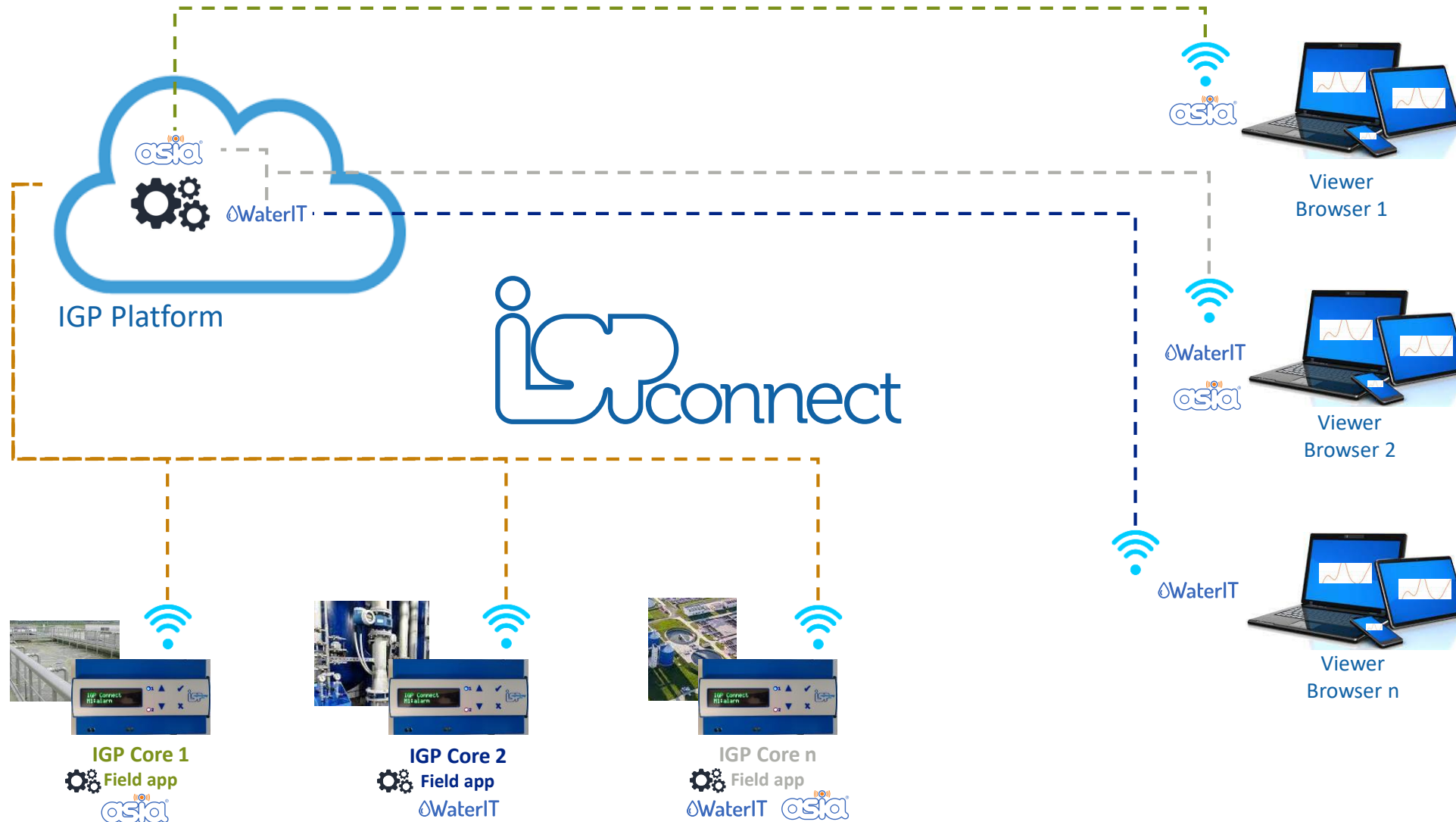


ASIA: what else?

ASIA can be natively integrated into Digital Systems of higher logical levels.



ASIA: what else?



Water^{IT}

ASIA can be integrated into WaterIT,
a **Supervision System** for the water sector

which provides information to all users interested in the management of the Plants and in the complete purification process, both locally and by remote control via Web Browser.

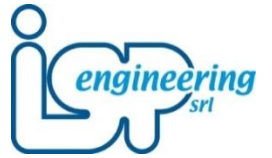
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On the Plant the same hardware (IGPcore) supports both ASIA and WaterIT softwares.

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IGP Engineering: who are we?



30⁺ years of experience in the water sector

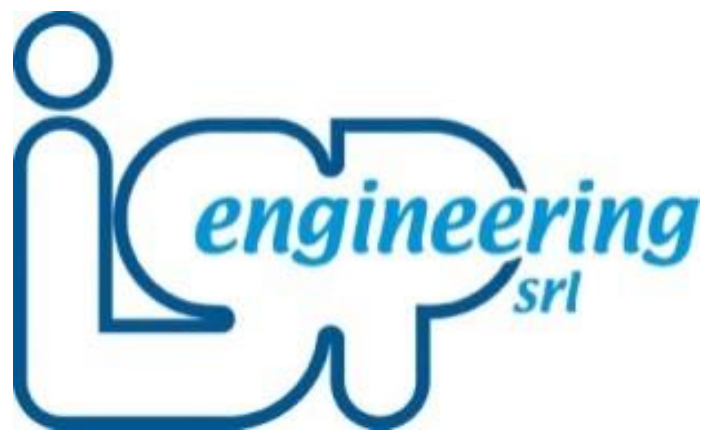
1500⁺ clients

5 areas of specialization:

- Potable water
- Wastewater
- Swimming pools and fountains
- Pumping stations and irrigation
- Automation of water treatment processes

5 activities

- Consulting and design
- Lab analysis
- Operation of plants
- Ordinary and extraordinary maintenance
- Sale of machines, spare parts, reagents



Water^{IT}

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