

IoT

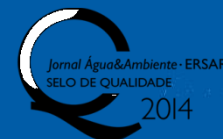
SMAS de Almada
June 17th 2015



Serviço Público Municipal de Excelência



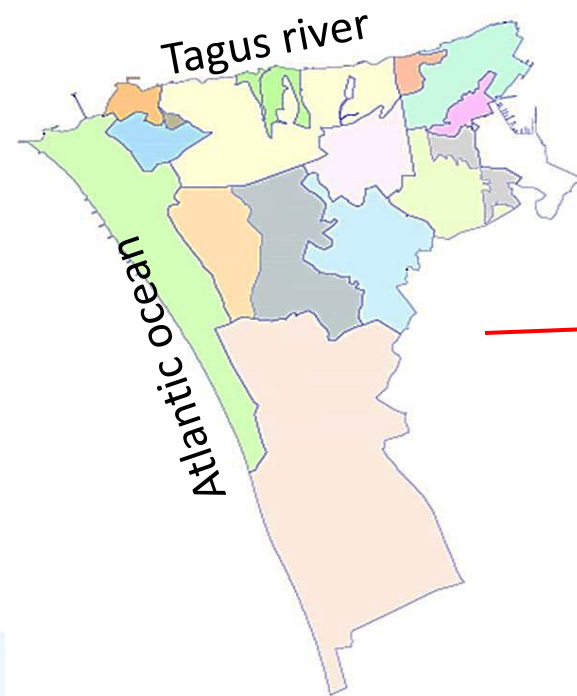
Qualidade Exemplar
da Água para Consumo Humano



Qualidade Exemplar da Água
para Consumo Humano

General characterization of SMAS

SMAS are responsible for the public water utilities in Almada municipality, that cover 71km², on the left side of the Tagus River, between the riverfront and the Atlantic coast.



- **Mission**

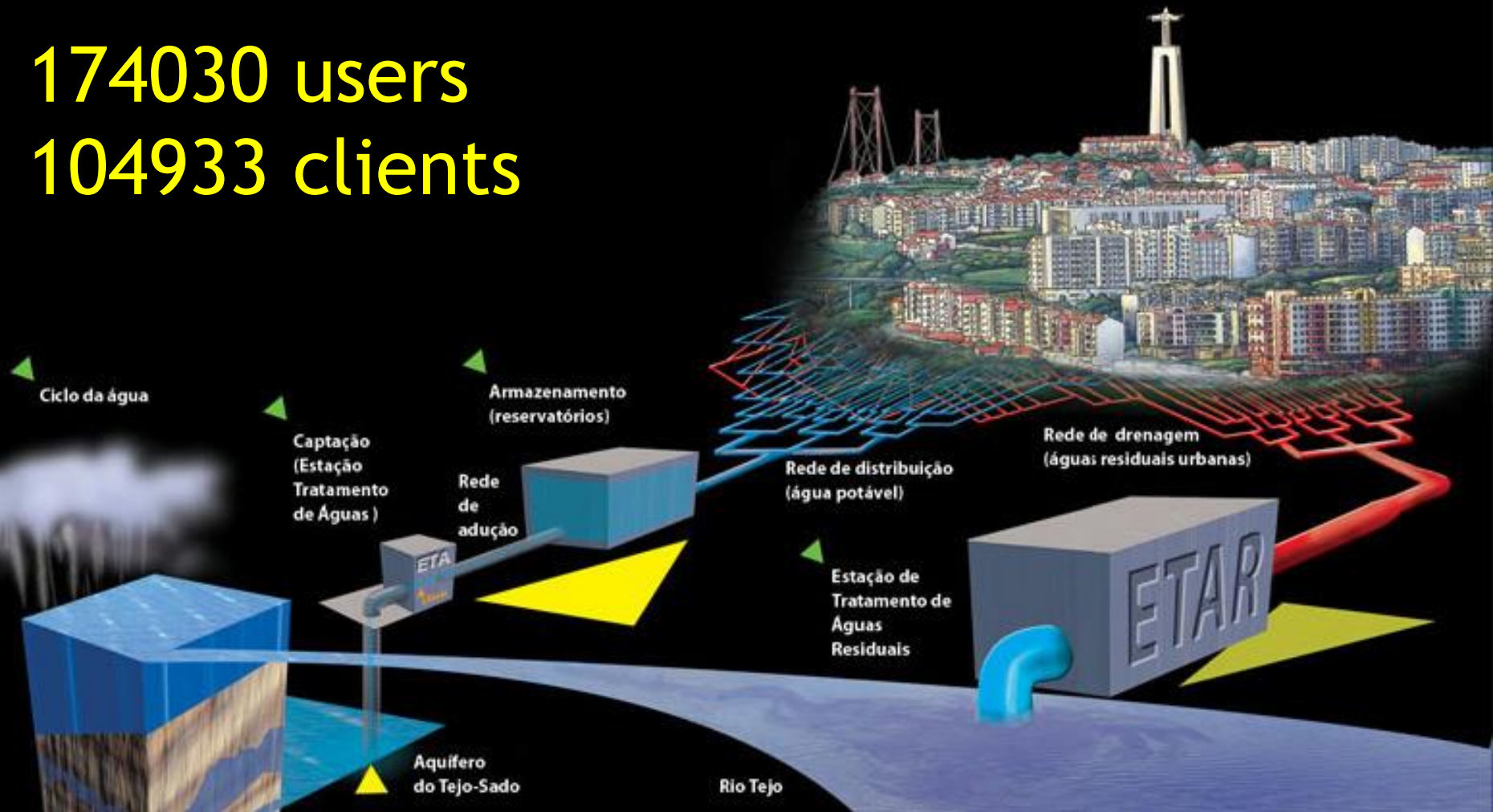
Ensure the water supply, drainage and treatment of wastewater and drainage of rain water in Almada municipality

- **Vision**

Be recognized as an excellent municipal public supplier in the water sector.

Urban cycle of water

174030 users
104933 clients



General characterization of SMAS

- 16.090.000 m³ of water produce/year
- Groundwater source
- 84 km of pipelines
- 882 km of distribution pipes
- 9 pumping stations
- 85.350 m³ of total reserve of water (25 tanks)
- 1 water laboratory for drinking water
- 16.643 analyses per year

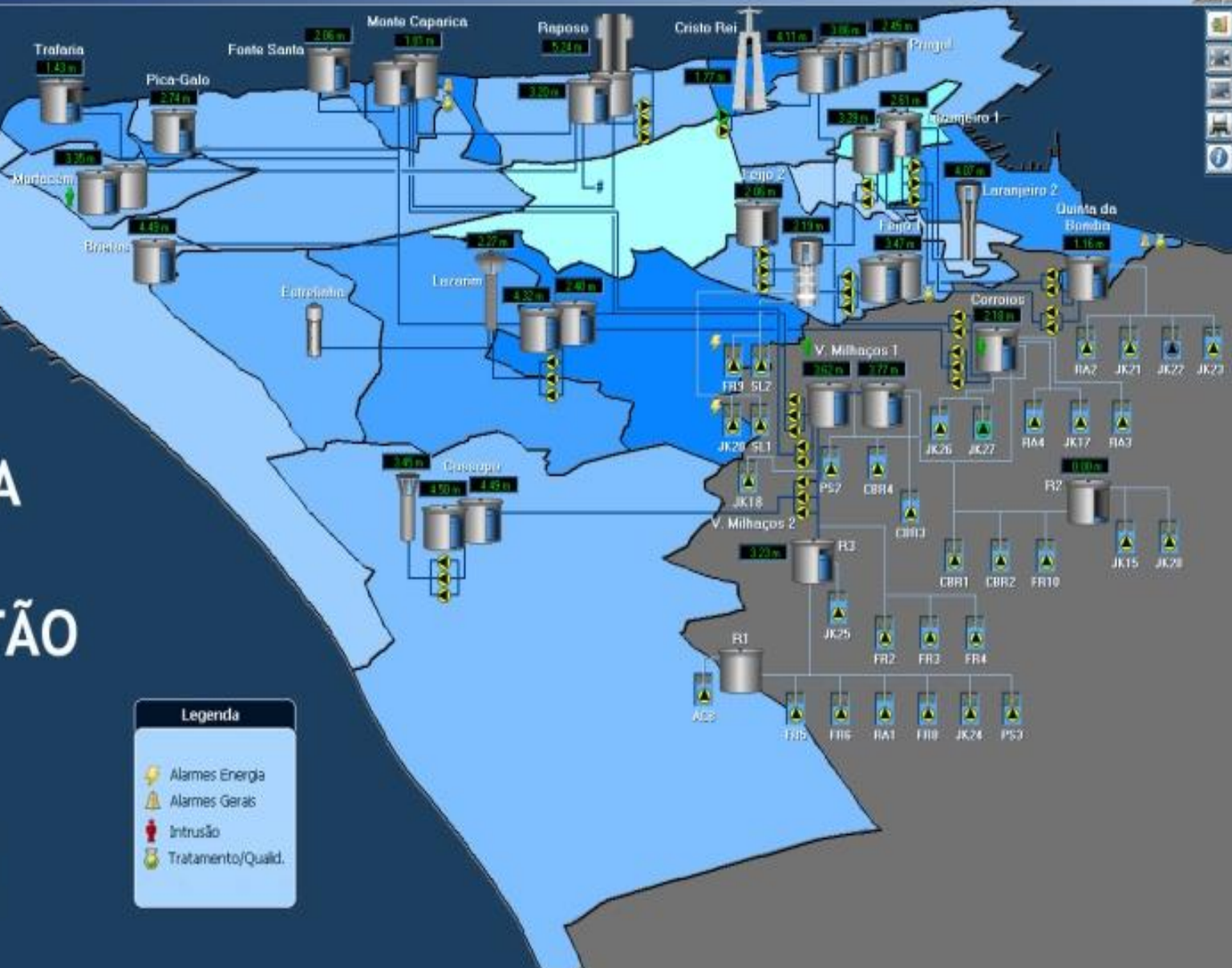
- 590,5 km of domestic pipelines
- 493,8 km of rainwater pipelines
- 15 pumping stations
- 4 wastewater treatment stations
- 1 water laboratory for wastewater
- 7.791 analyses per year

SISTEMA DE TELEGESTÃO

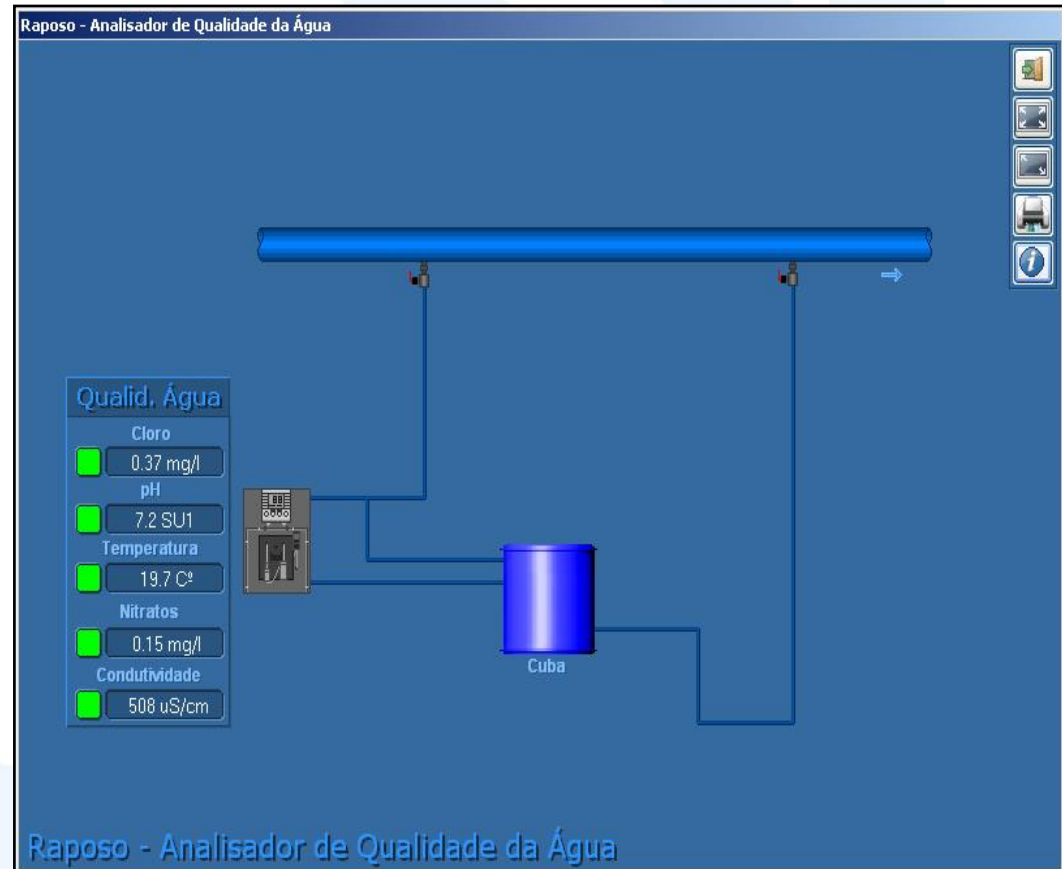


Legenda

-  Alarmes Energia
-  Alarmes Gerais
-  Intrusão
-  Tratamento/Qualid.



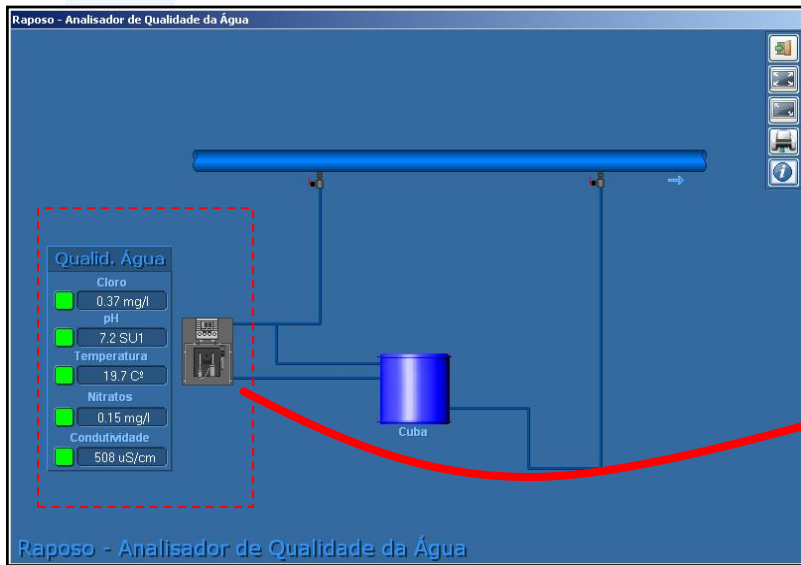
How do we do online measures



Water safety plan

- Risk management
 - For each hazard and hazardous events
- Control measures
 - Early warning systems (for quality and quantity of water)
- Operational control
 - What, how, when, where will be measure
 - Who and how perform the monitoring and analyses

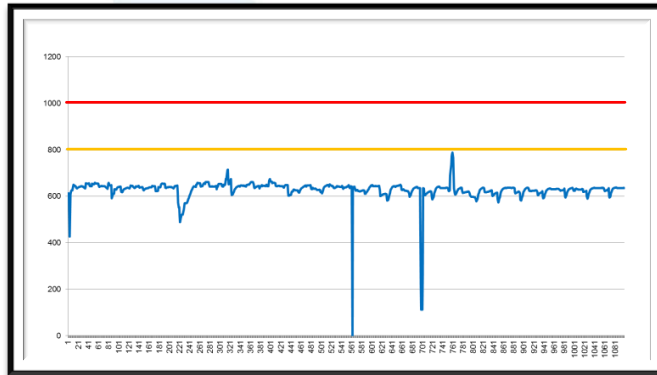
Alert levels and alarms



Níveis de Alarme

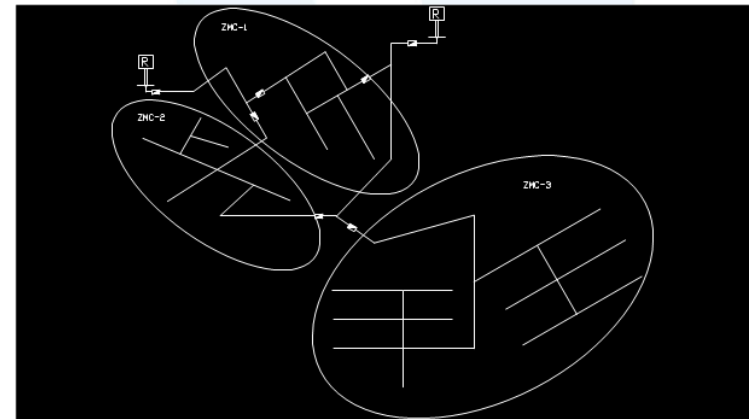
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Descritivo	
Máximo de Escala	2500.000
Mínimo de Escala	0.000
Alarme Muito Alto	1000.000
Alarme Alto	800.000
Alarme Baixo	0.000
Alarme Muito Baixo	0.000

Aceitar Cancelar



Water measurement and control

- Create strategic zones to control hydraulic variables in the water network
 - Flowrate
 - Pressure
- Dynamic modulation
 - Day-night pressure control
 - Detection of water leakages



Obtain the reduction of water losses and maximize energy efficiency

Water brigade



Large scale potential for IoT

– Large-scale Networks:

- Drink water network
 - Bulk & Retail
- Waste water network
 - Bulk & Retail
- Rain water network

– Large-scale needs:

- Low cost devices
- Ease of installation
- Low maintenance
- Good communications
- adaptability



Thanks

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- Carlos Sousa | csousa@smasalmada.pt