



HIDROMOD

Jornada de Trabajo CloudPYME,
cloud para Empresas que innovan

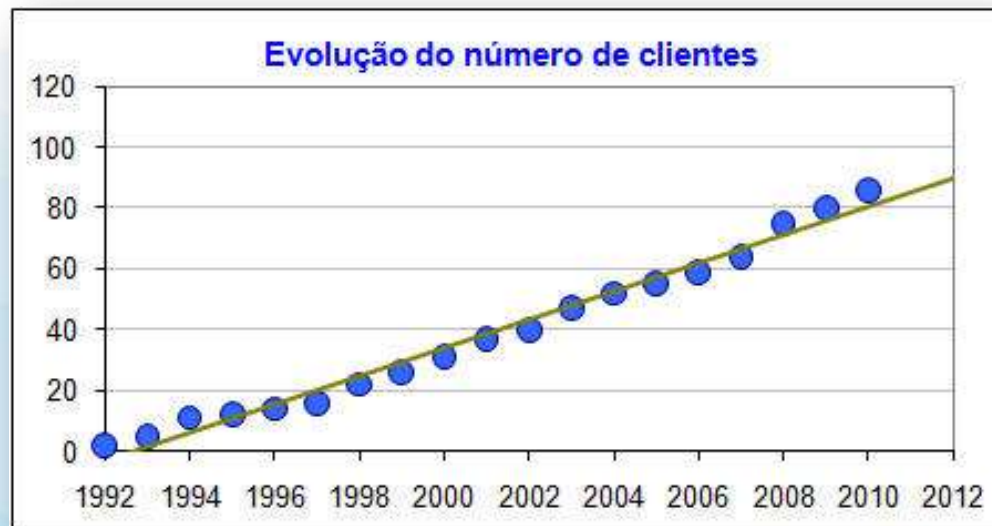
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- AquaSafe
- HPC



Hidromod

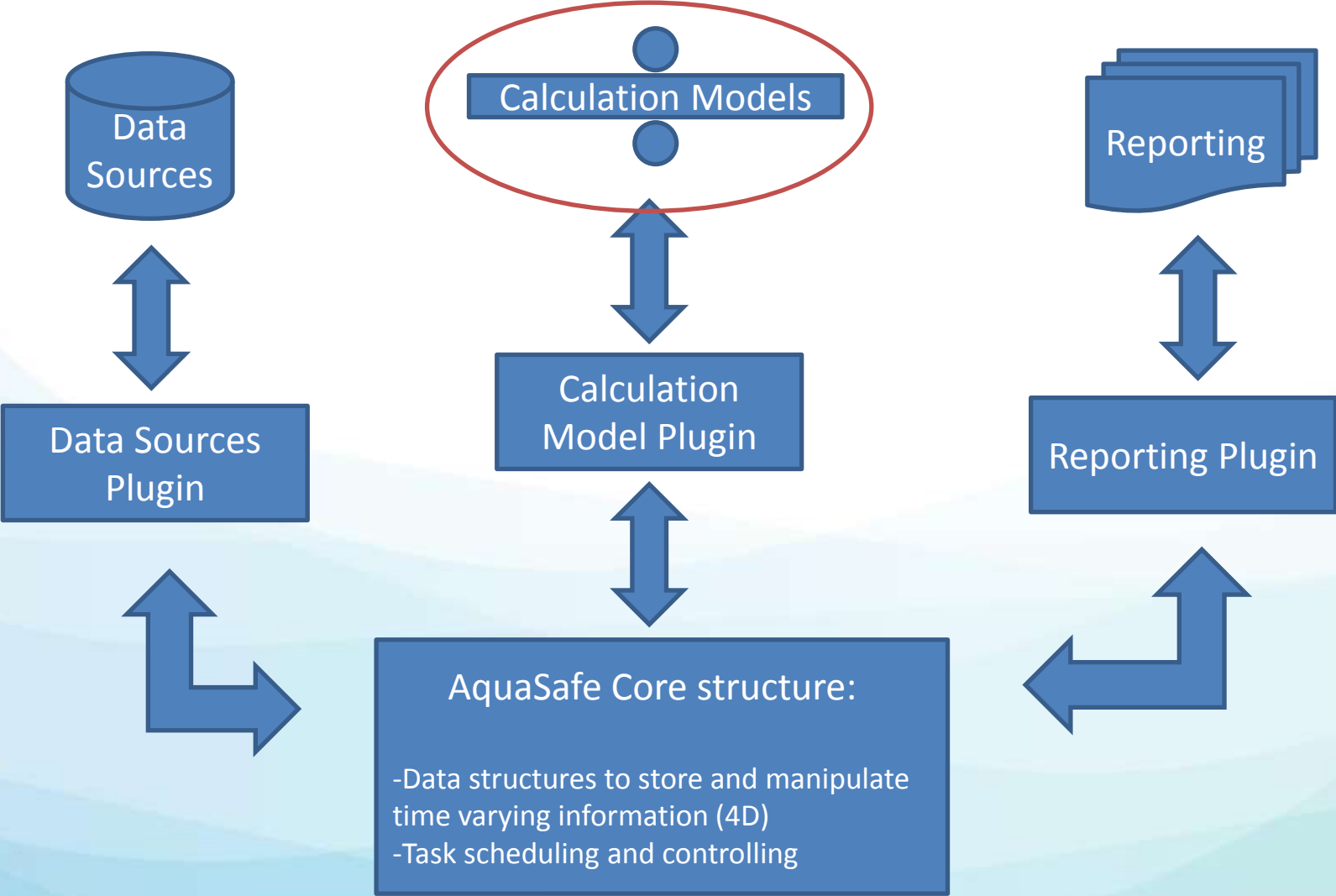
- Started in 1992
- Over 350 projects



AquaSafe System

- Platform that automates data acquisition, storage, numerical model execution
- Data sources, calculation models and reporting are extended to include new formats without any changes to the server structure.

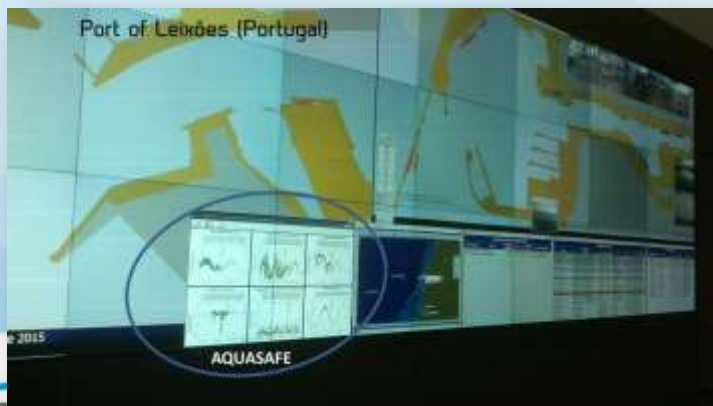
Architecture



Automated models

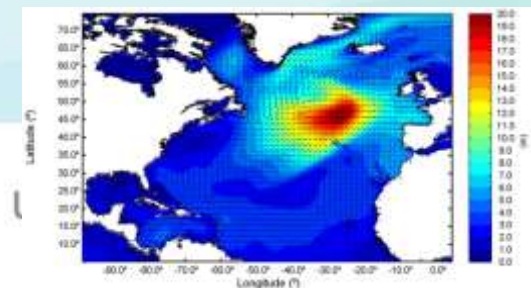
- MOHID
- SWAN
- WWIII
- SWMM
- EPANET
- SWAT
- MOHID Land
- Aquacrop
- Price2D
- SewerGEMS
- Water GEMS

Clients

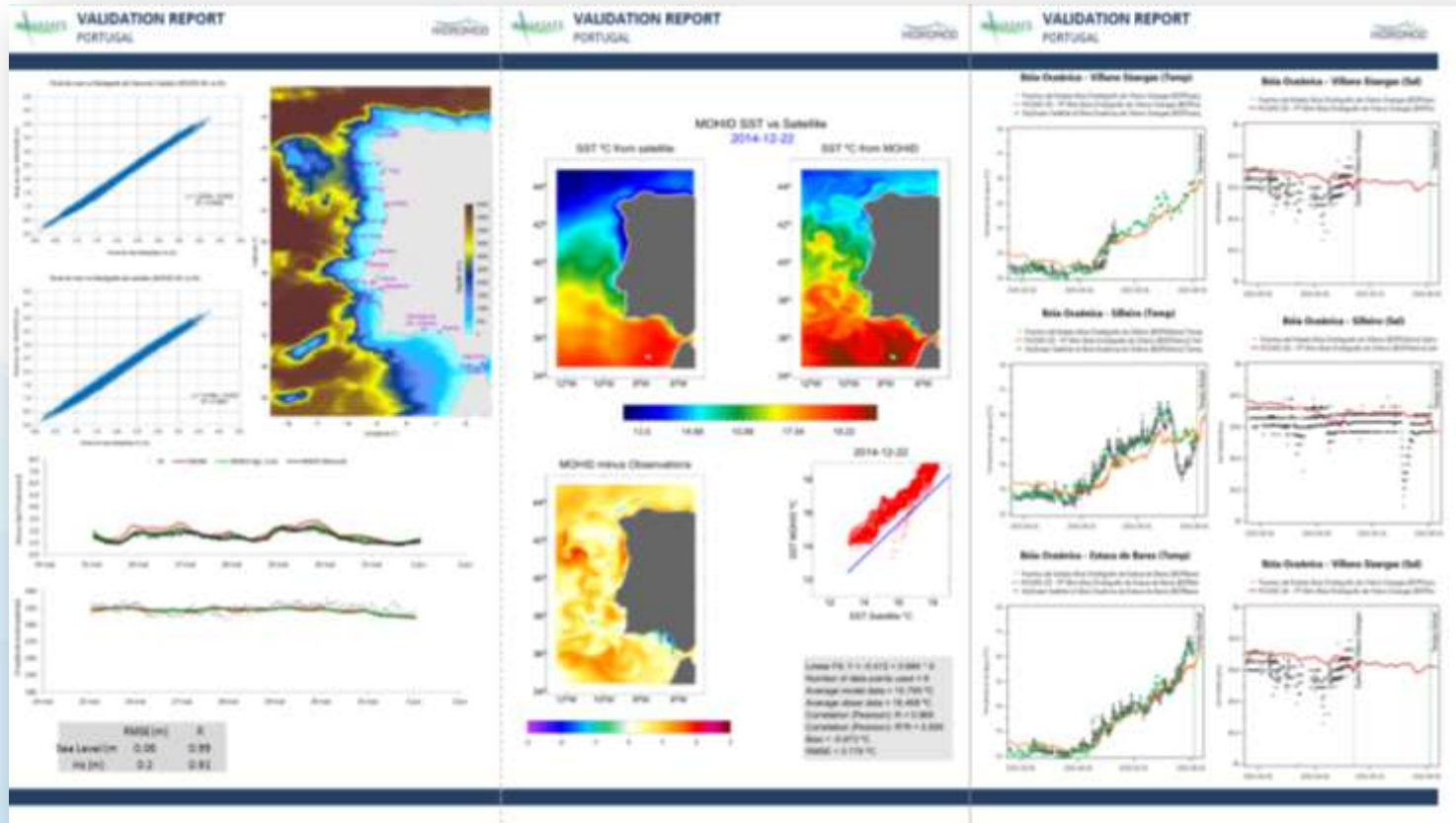


Clients

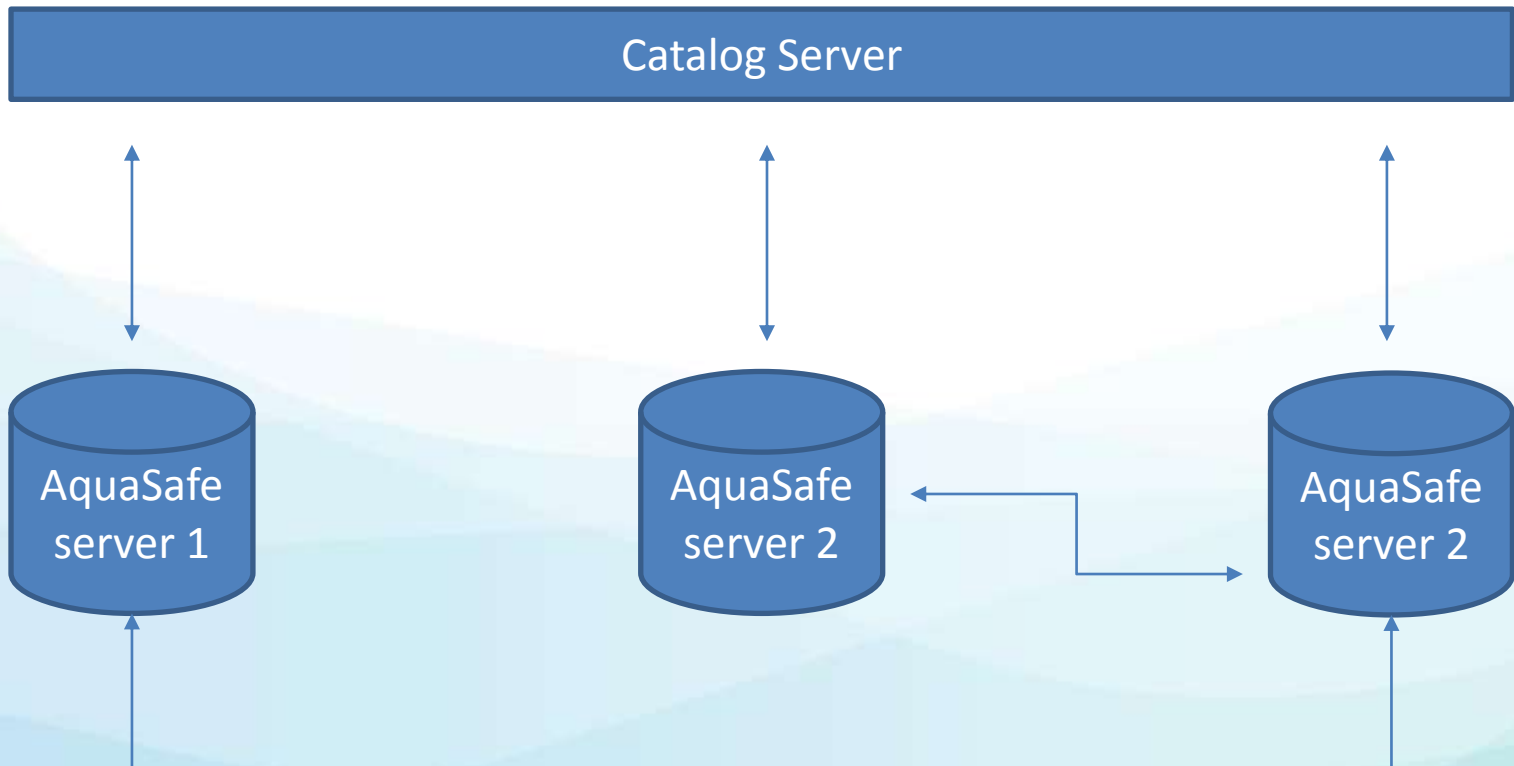
- Instant value (e.g. Mobile app – last value measured Hs measured)
- Time Series (e.g. web page – sea level forecast)
- Along a trajectory (e.g. operation room – currents, waves and water column along a trajectory)
- Field variable in time (e.g. web page - swell variability at the Atlantic scale)



Clients

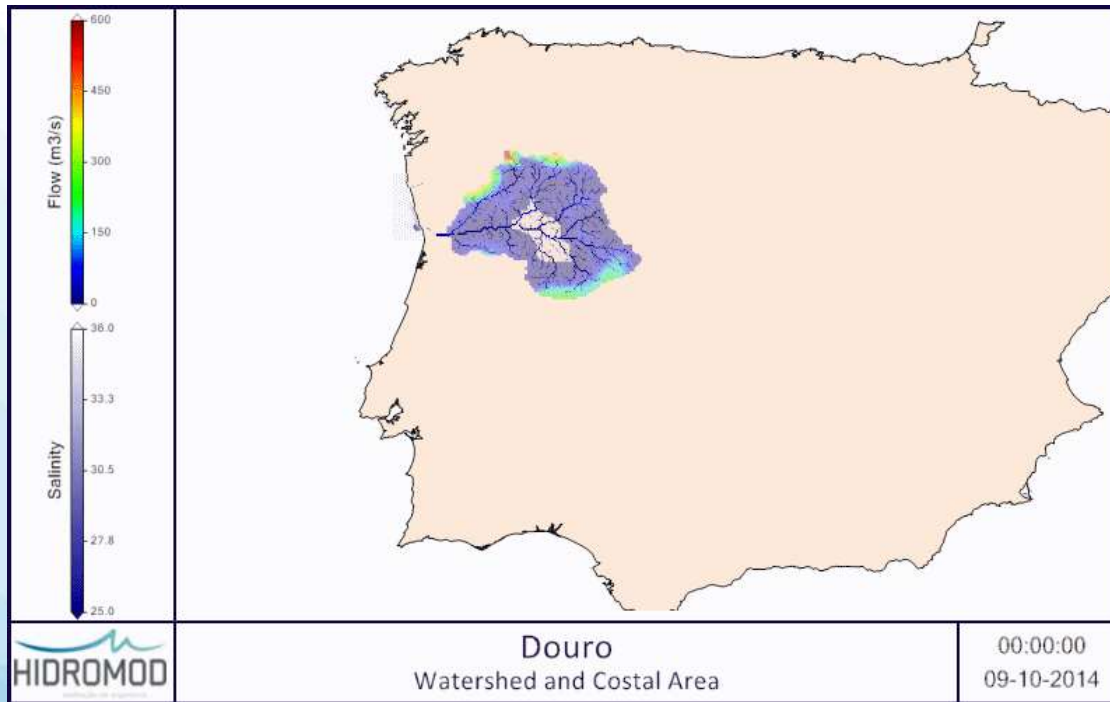


IT infrastructure

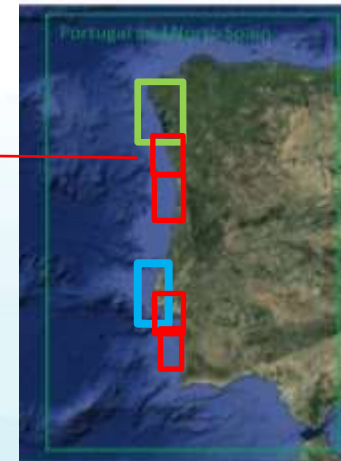


Projecto	Empresa	CPU	#Threads	Benchmark	RAM	HDD	RAID
APDL	Hetzner	Intel® Core™ i7-4770 CPU @ 3.40GHz	8	9853	32	2x 2 TB	Software
EDP Douro							
Santos	OVH	Intel® Xeon® CPU E5-1650 @ 3.50GHz	12	12528	128	3x 2 TB	Hardware
Tumaco							
ww3 (manual)							
Portugal	Hetzner	Intel® Core™ i7-3930K CPU @ 3.20GHz	12	12087	64	2x 3 TB	Software
DataCenter							
ww3 (manual)							
Envitejo	Hetzner	Intel® Core™ i7-3930K CPU @ 3.20GHz	12	12087	64	2x 3 TB	Software
FTP							
MyWater							
Sowfia							
Surf							
APSS	Hetzner	Intel® Core™ i7-3930K CPU @ 3.20GHz	12	12087	64	2x 3 TB 2x 240 GB (SSD)	Hardware
AMOS							
FIGARO							
Sines							

Metocean solution – Integration with river flow forecasts

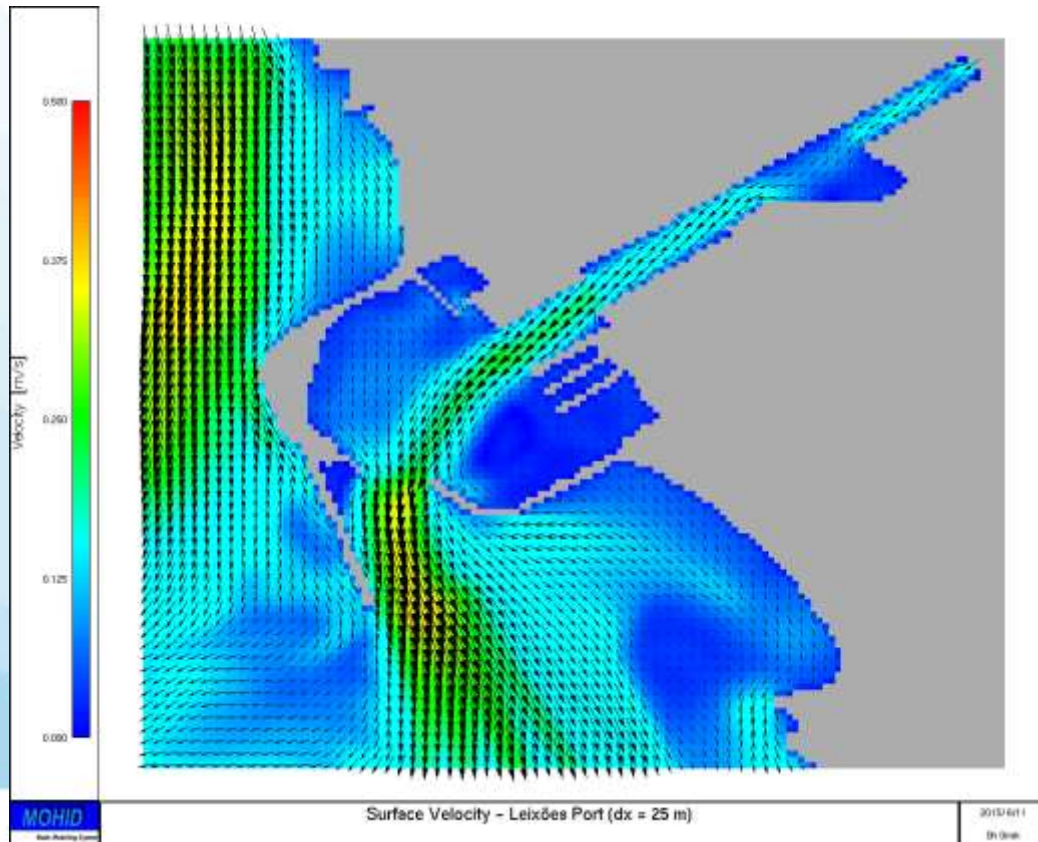


HIDROMOD
MODELLER DE HIDROLOGIA



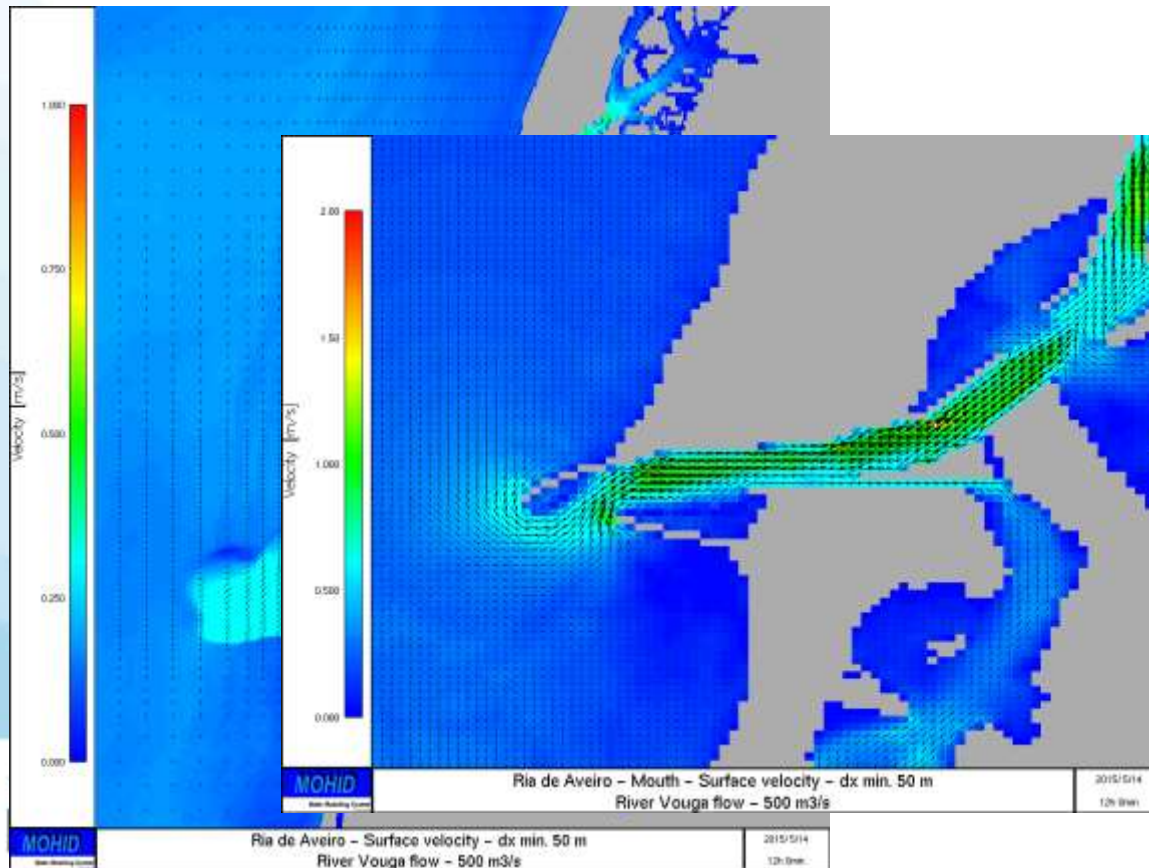
Metocean solution – Currents, sea level and density

Leixões Port – capturing the flow complexity at the port scale (dx = 25 m)



Metocean solution – Currents, sea level and density

- Ria de Aveiro (CESGA - HPC) – dx min. = 50 m

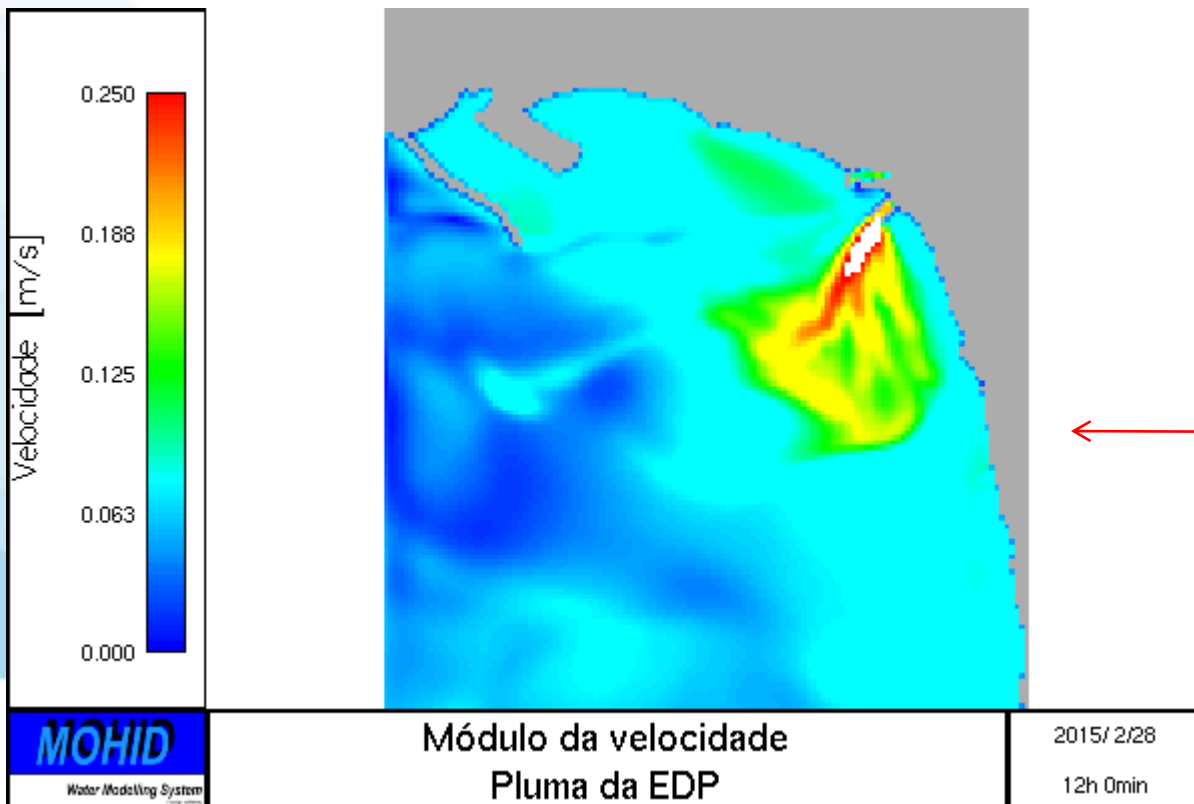


HIDROMOD
CONTROLLED BY INOVIDEON



Metocean solution – Currents, sea level and density

Sines – capturing the flow complexity at the marine structures scale ($dx = 40$ m)



HIDROMOD
MODELLER BY HYDROPHYSICS

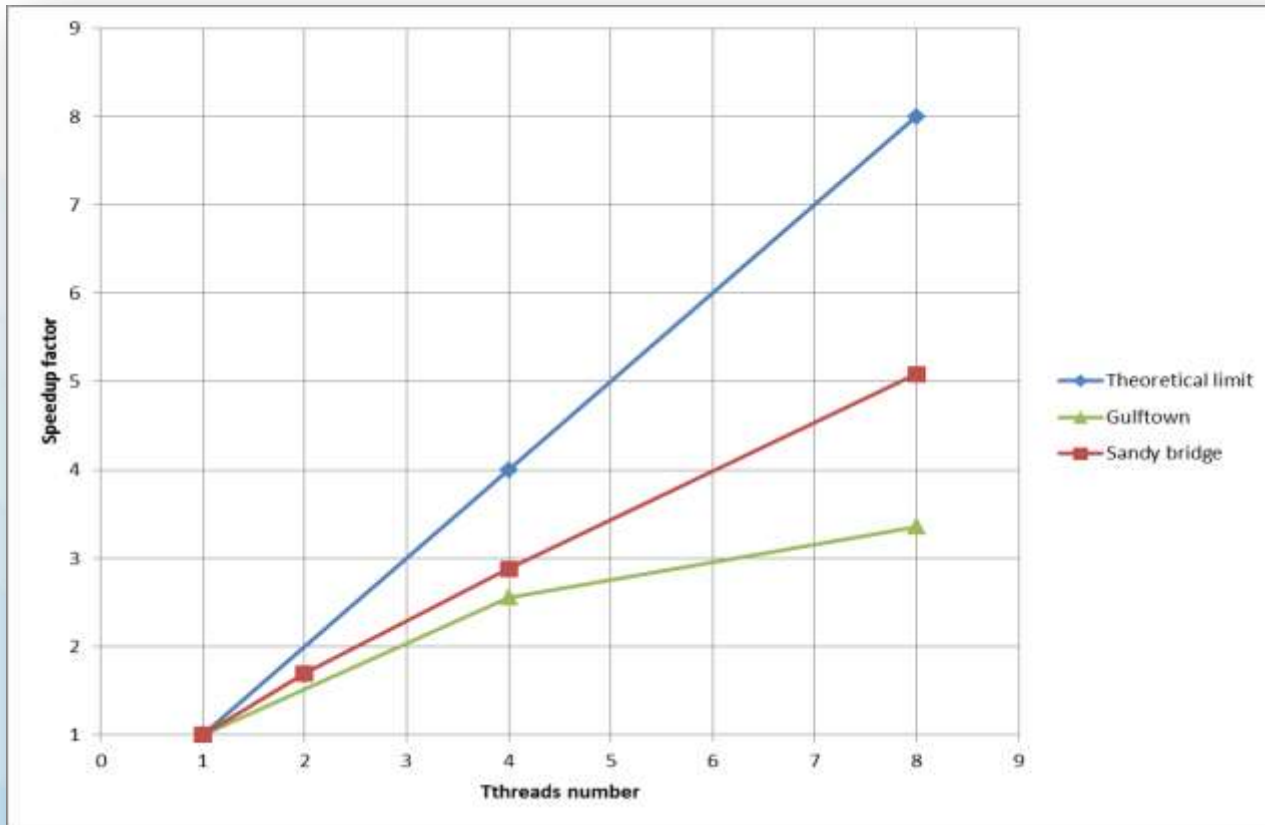


HPC

- Integrating the Hidromod forecast platform (AquaSafe) with the CESGA super computing infrastructure

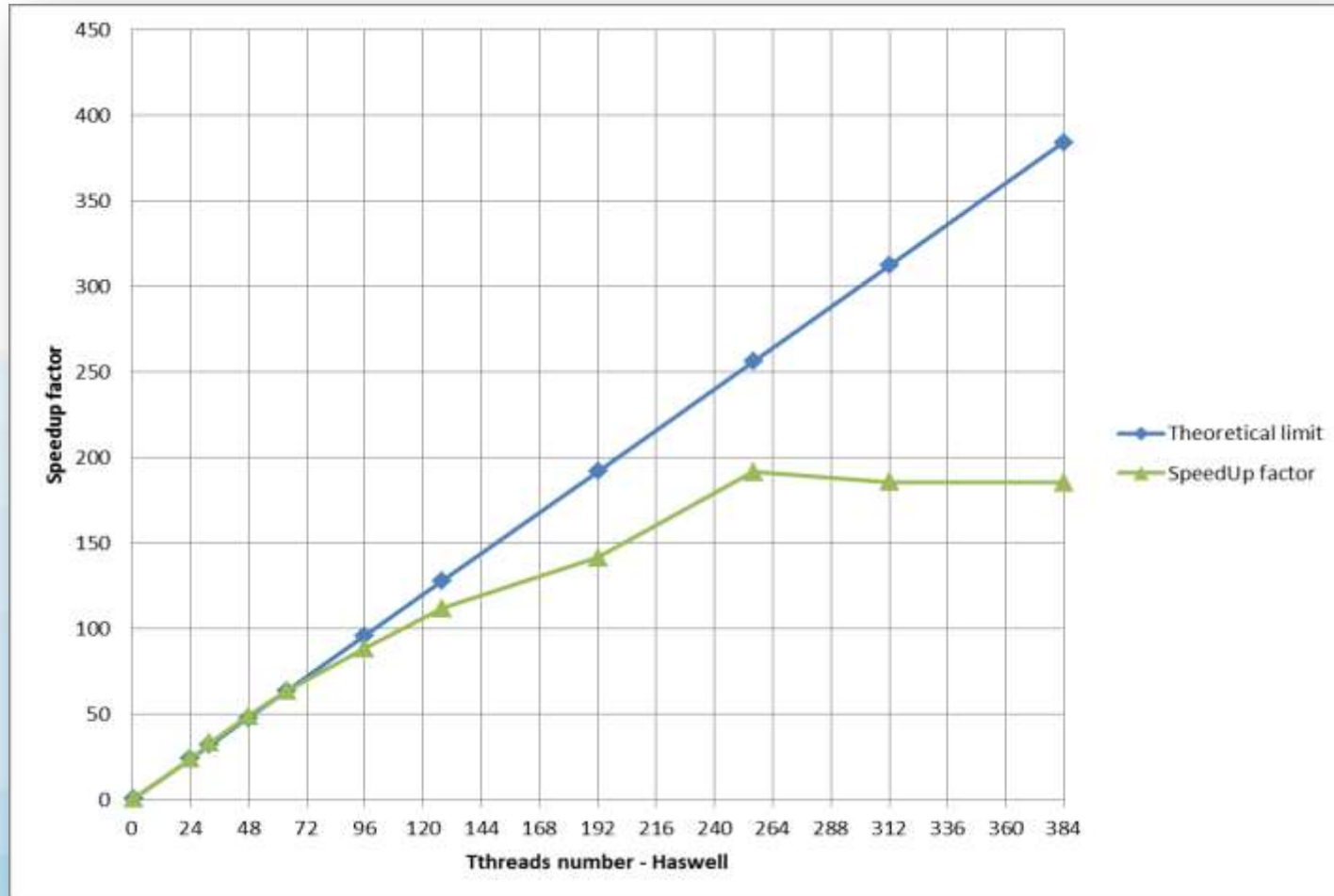


Previous tests

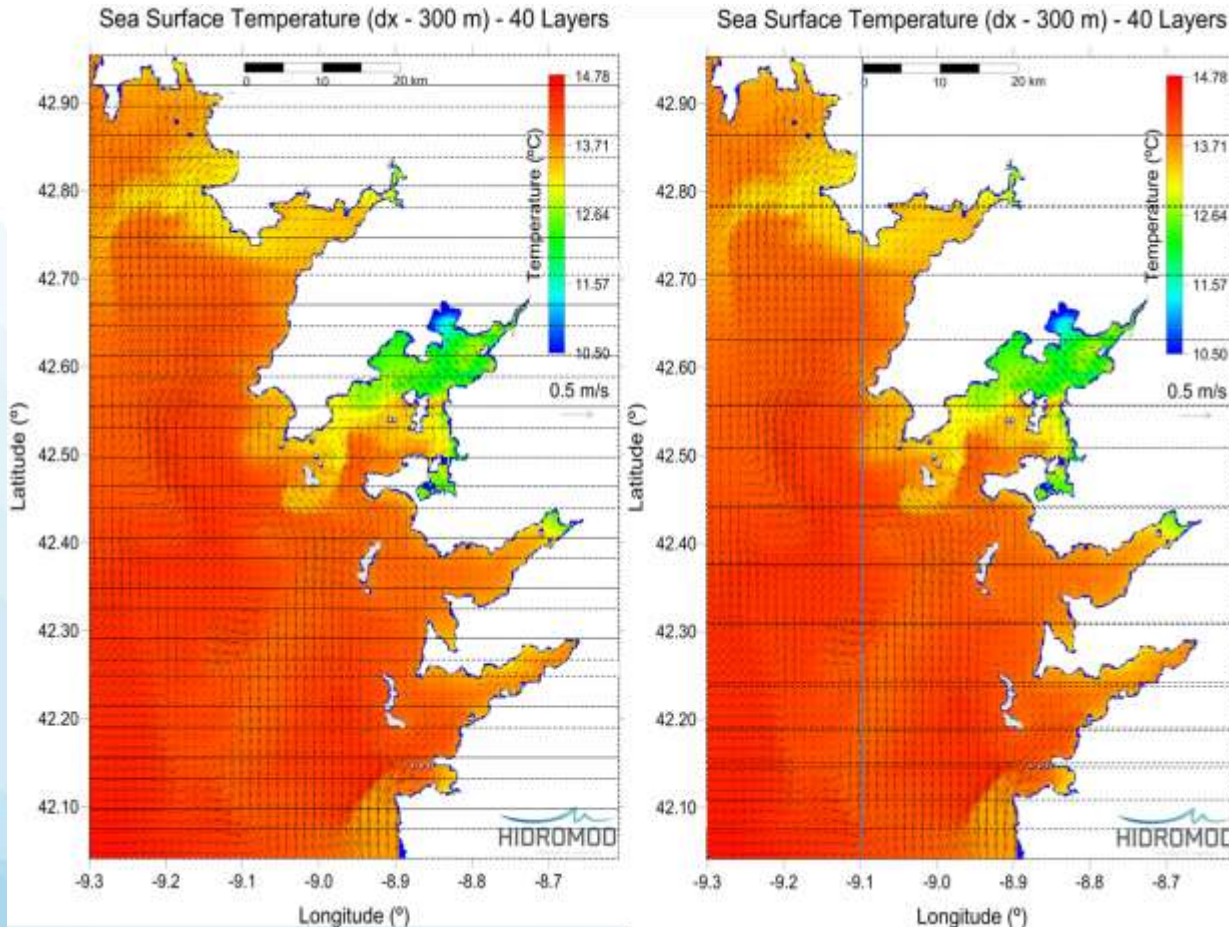


Speedup factor of MOHID Rias Baixas implementation: red line - CESGA-SVG Sandy Bridge nodes; green line - standard pc with GulfTown microarchitecture.

Previous tests

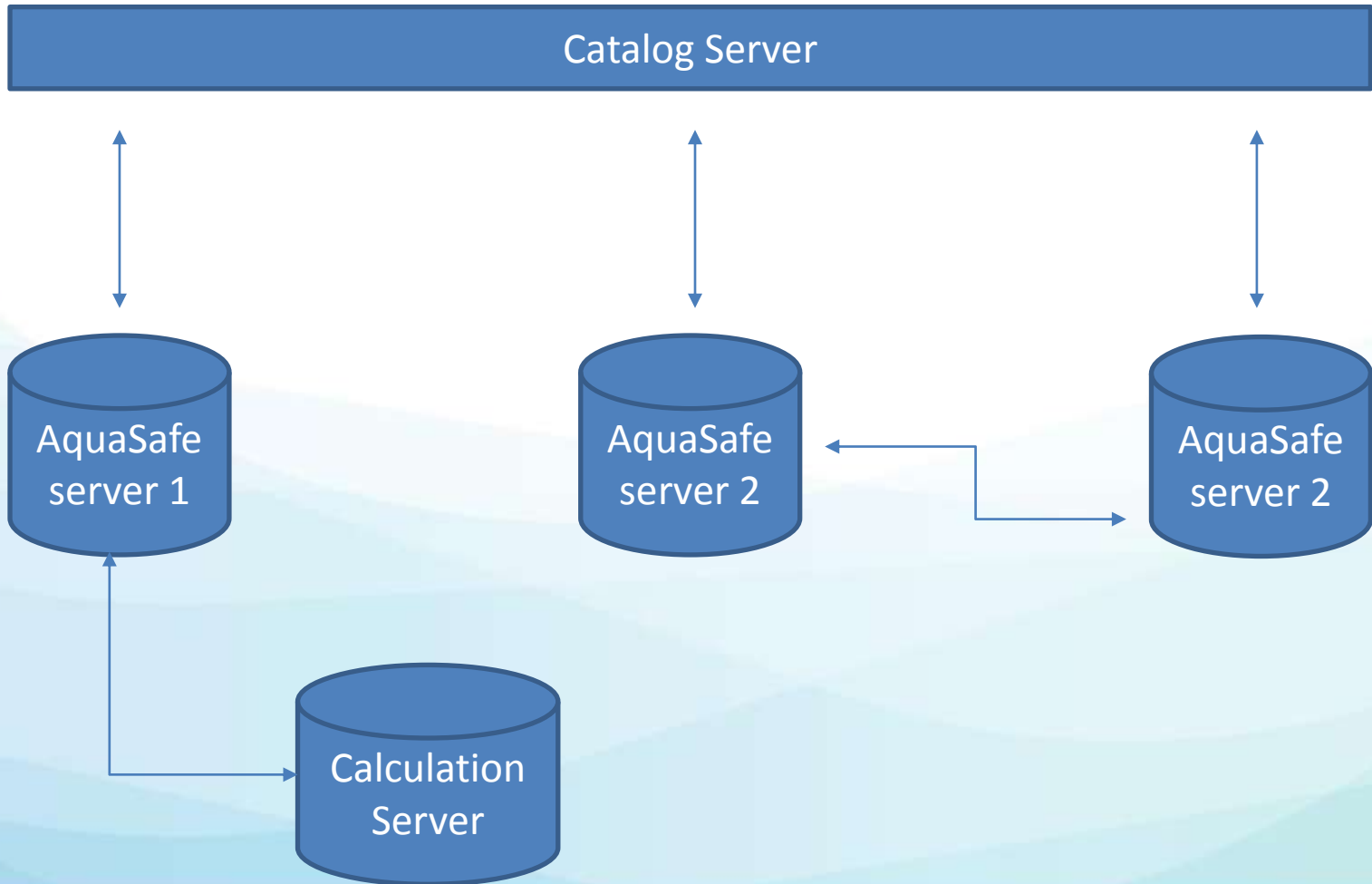


Previous Tests



Division done by the domain decomposition of Rias Baixas model in 32 sub-domains : left panel - using the default procedure done automatically; right panel - division defined by the user via an input file.

IT infrastructure



Questions?



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