

40 años

UNIVERSIDAD NACIONAL
INSTITUTO DE INVESTIGACION
CIENTÍFICA, TECNOLÓGICA
Y SISMOLOGICA DE COSTA RICA

OVSICORI-UNA

**Seismic Network,
Acquisition System**

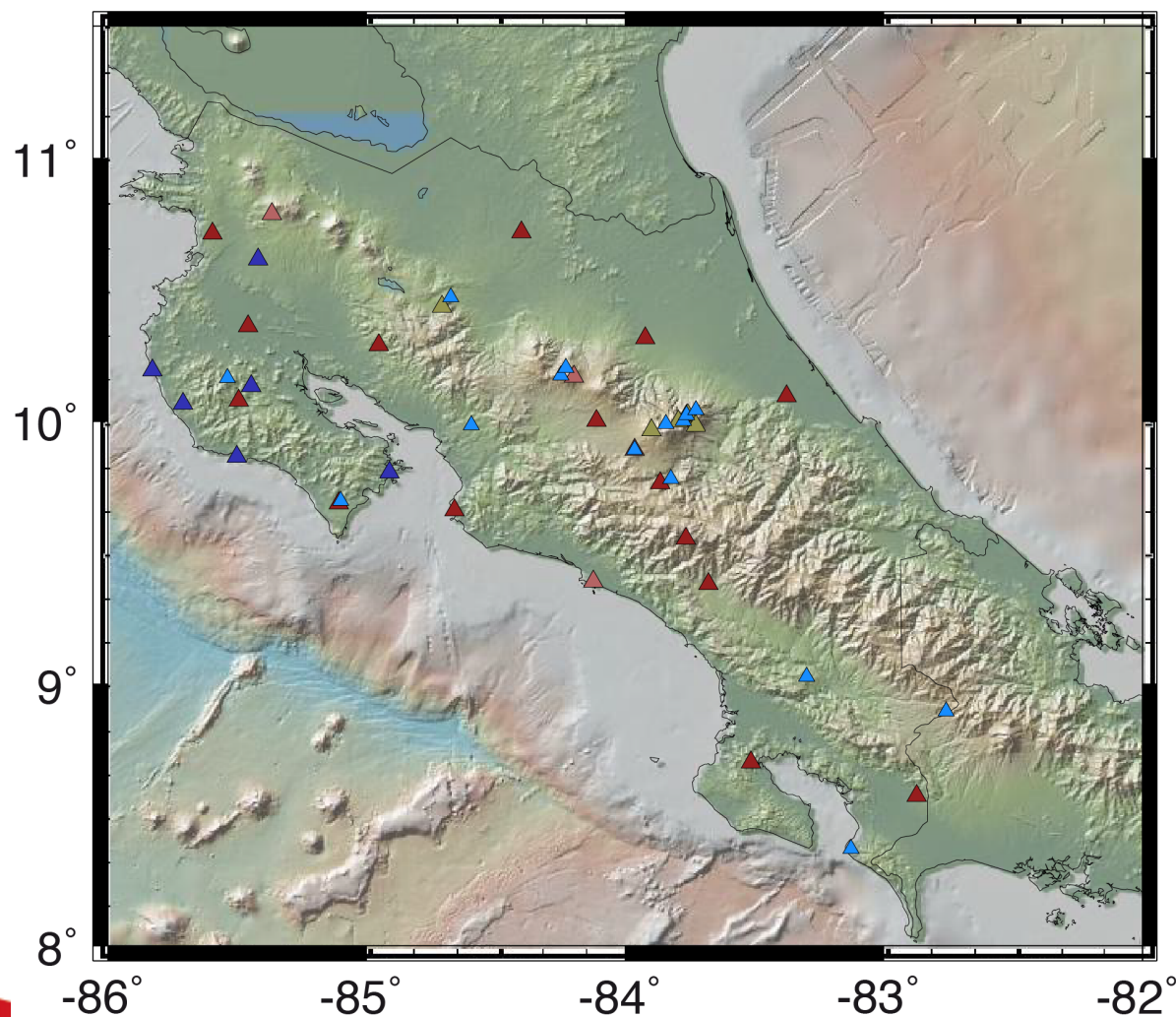
and

Data Archiving and Processing

Javier Fco. Pacheco and Christian Garita

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Network Distribution: OVSICORI



Station distribution



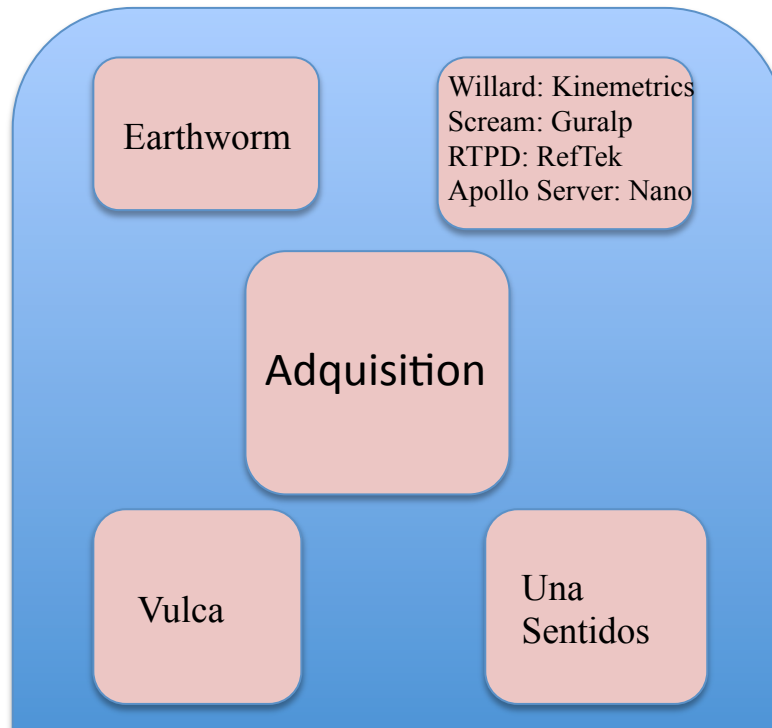
- 15 short-period, 1 component stations. Radio Link (VHF)
- 4 RefTek digitizer + STS2 sensors. Cellphone link.
- 2 RefTek digitizers + Mems accelerometer. Ethenet link.
- 8 Taurus digitizers + Trillium Compact. Radio Link (5.2 Ghz)/ autonomous/ cellphone link.
- 2 Guralp CMG-6TD. Radio Link (900 Mhz).
- 2 Guralp CMG-DM24S3-EAM + CMG-3ESP Compact. Cellphone link.
- 15 Quanterra Q330 + STS2/Trillium 240 + Episensor. 2 Satellite, 2 Cellphone, Radio Link (5.2 GHz). → GPS Trimble

Server

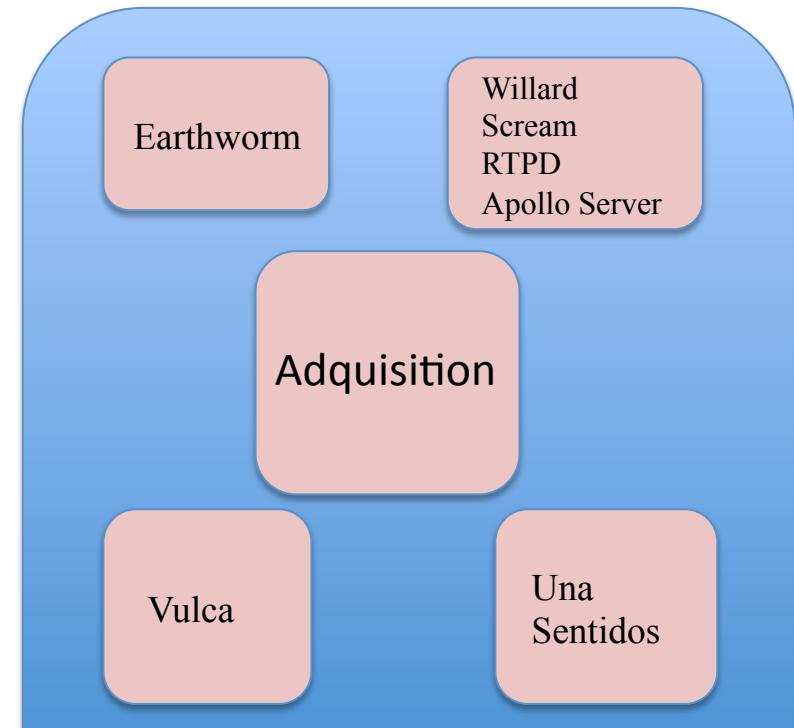


- VMWARE
- Virtual Servers with 8 Gbyte memory up to 256 Gbyte
- 4 core with 3 Ghz.
- Total memory 36 Terabyte, up to 180 T.

Server: VMWARE

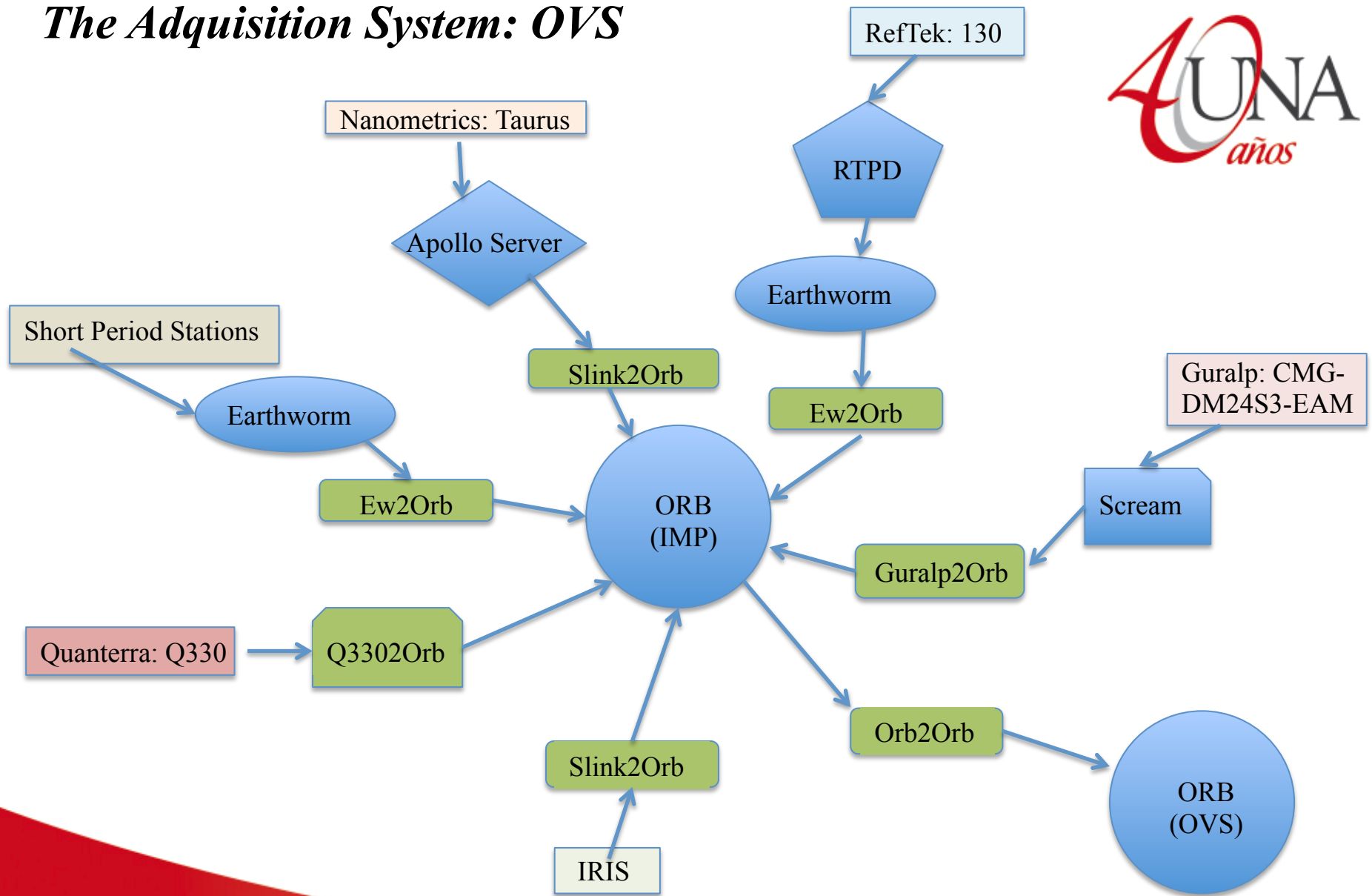


OVSICORI

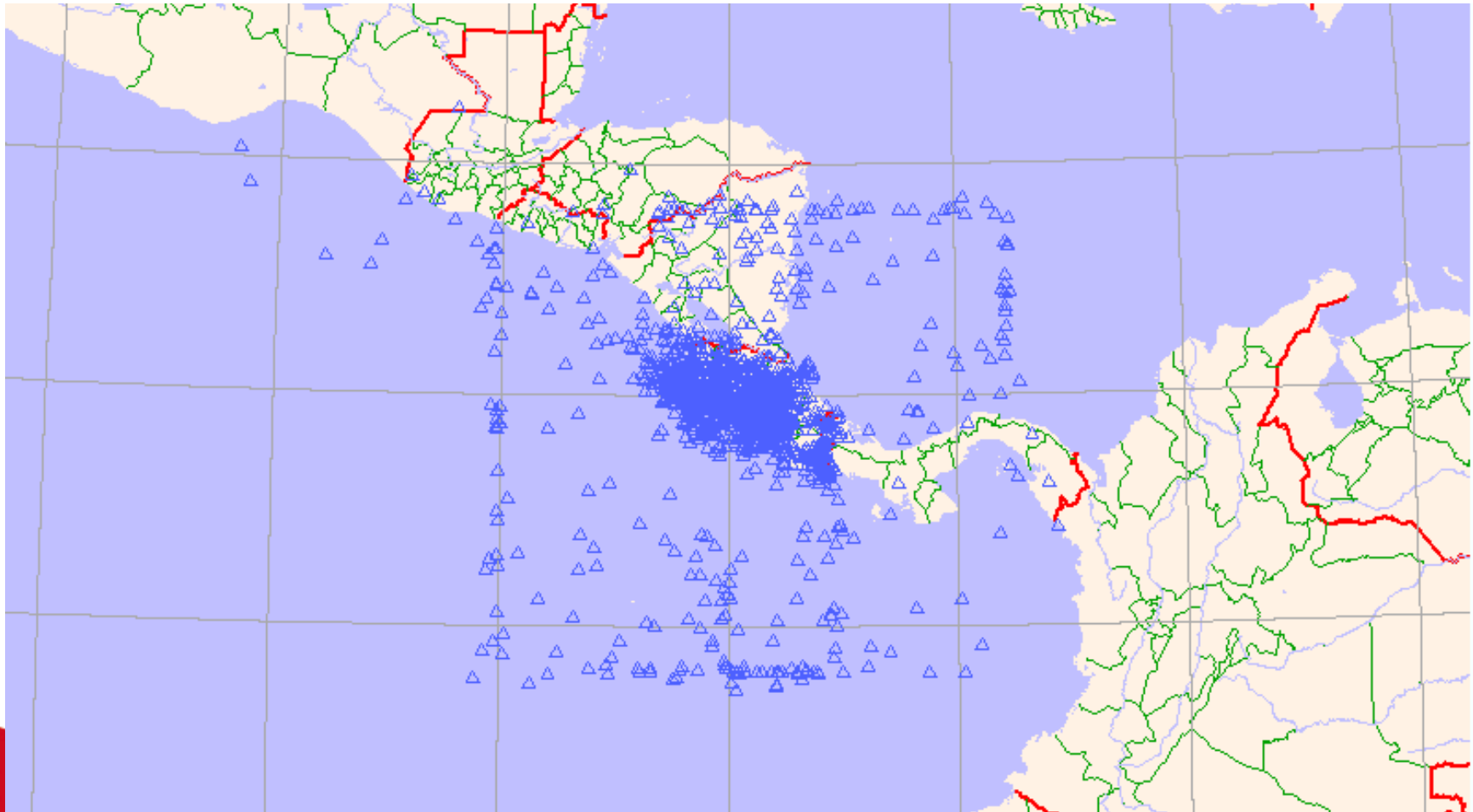


Centro Cómputo

The Acquisition System: OVS

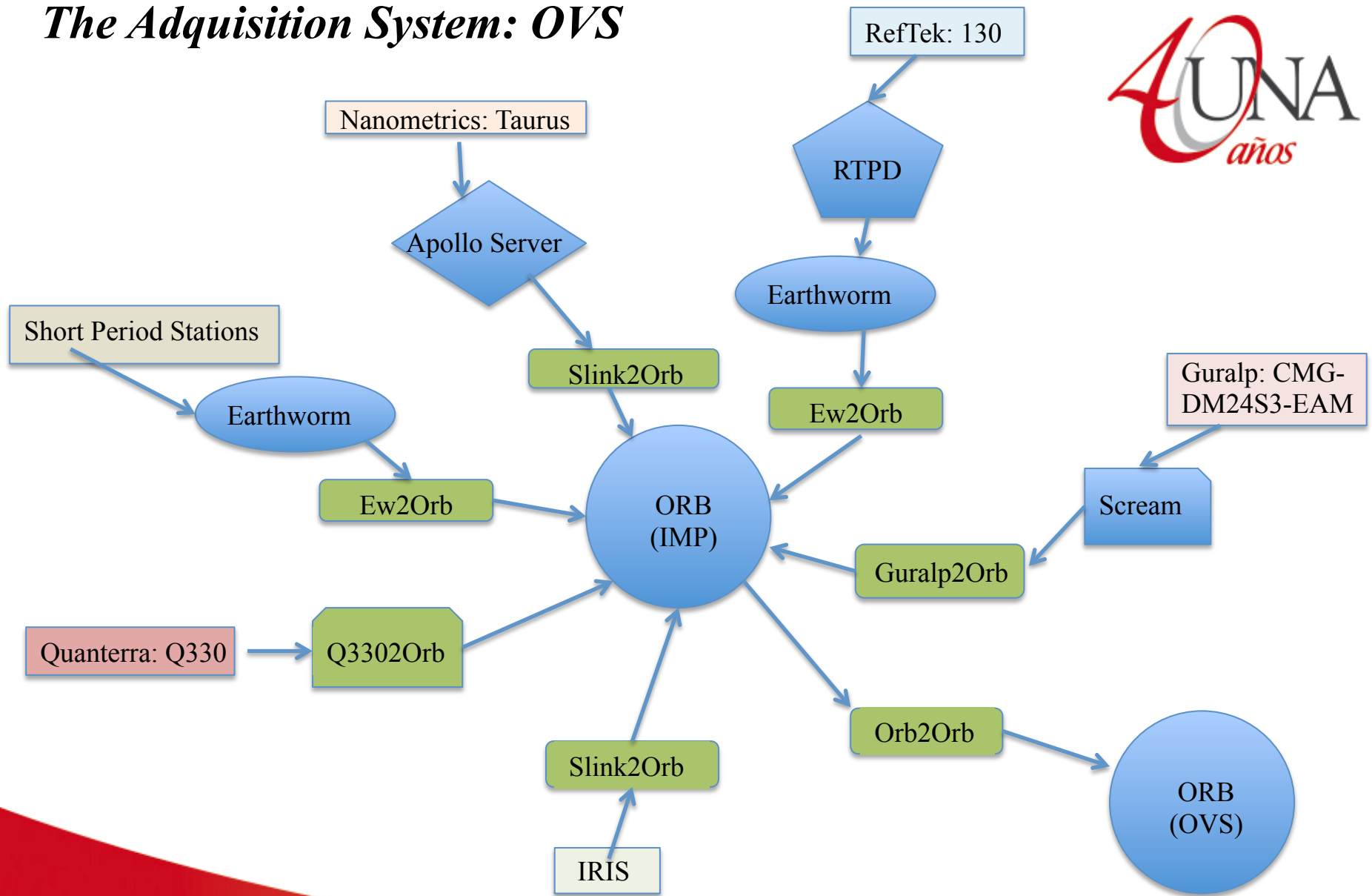


Automatic event location

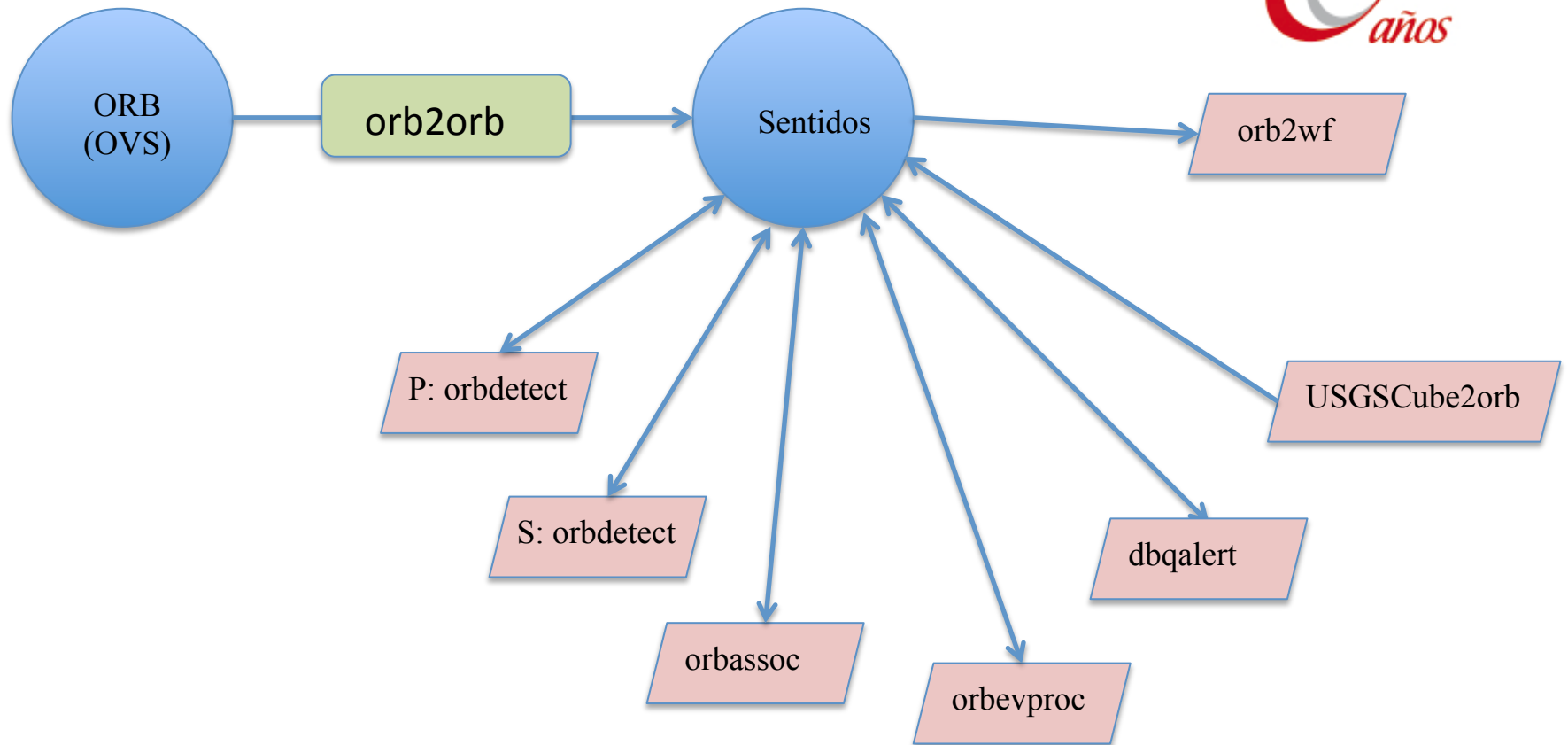


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The Acquisition System: OVS



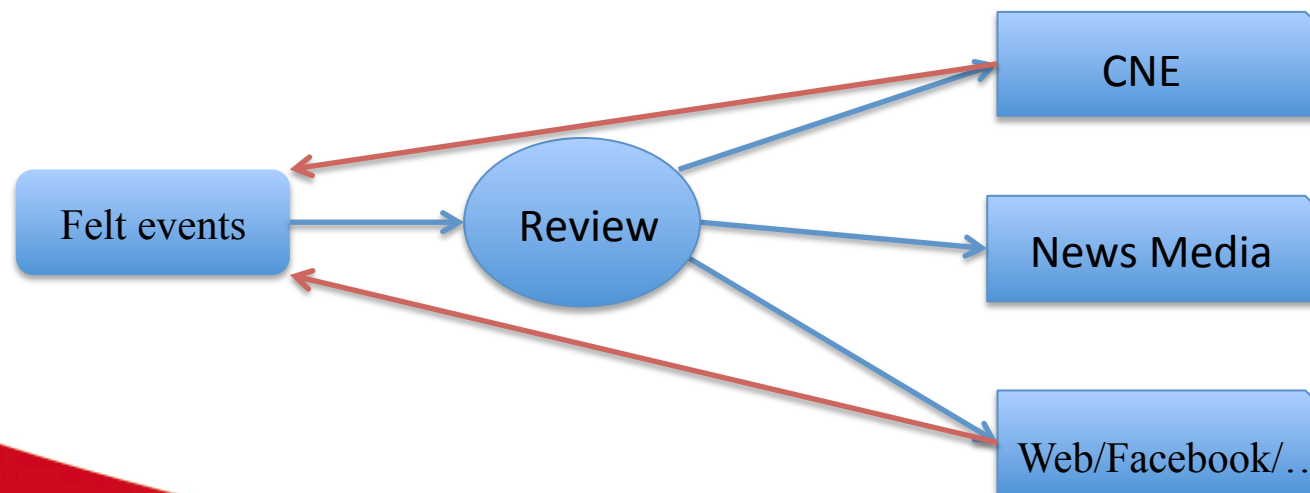
Sentidos/UNA/Vulca



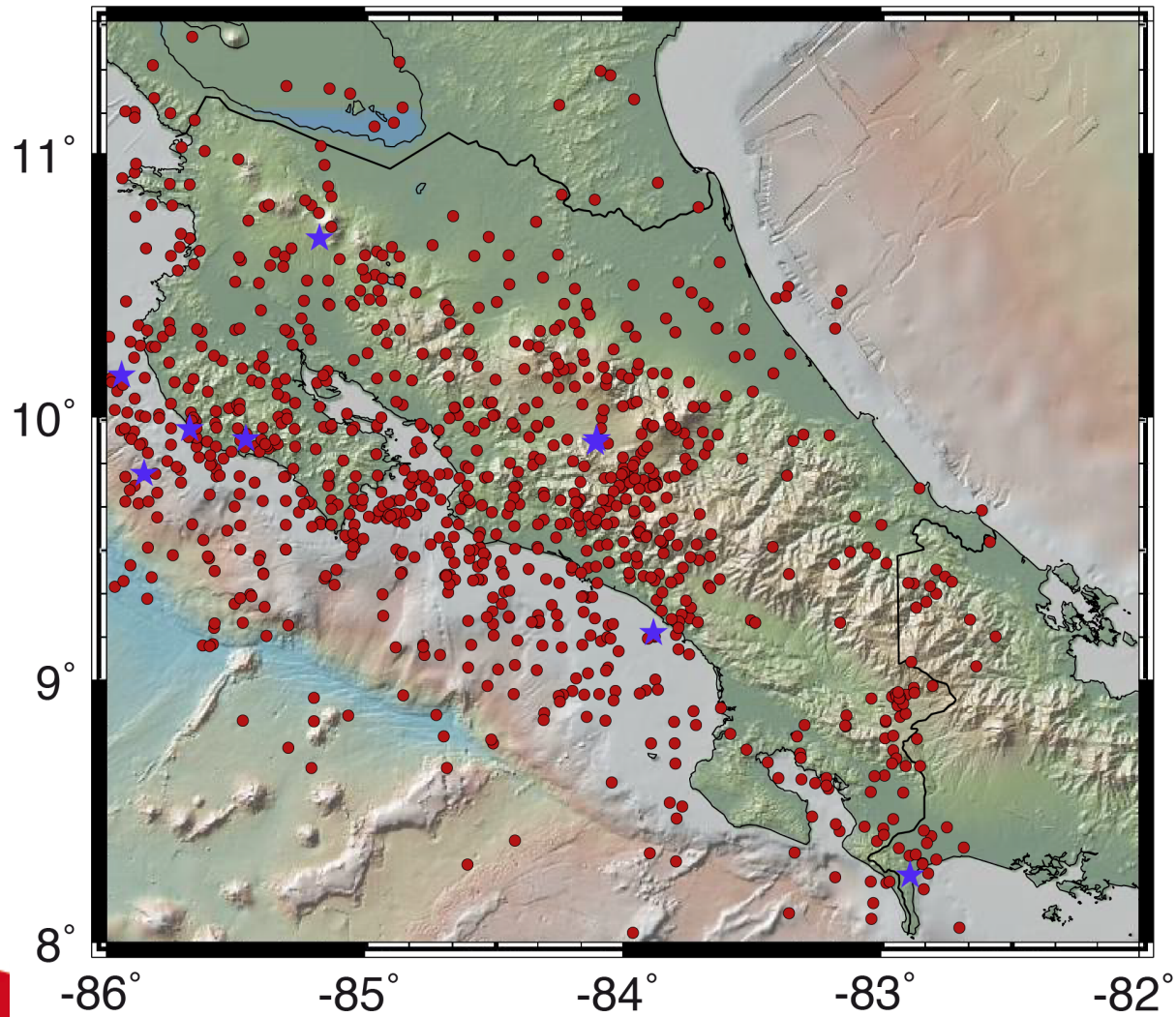
Event location



- *2 Analysts*
- *Between 1000 and 3000 events/month*
- *No catalogs since 1991, after the Limón event (M7.6).*
- *Felt events between 10 and 30 events/month*



September 2013



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For the future



- *Replace short-period stations by Q330 + Trillium 240*
- *Increase the network to fill up gaps in the Caribbean, South and Central Costa Rica*
- *Provide near real-time shake maps for the web.*
- *Provide near real-time moment-tensor inversion to improve magnitudes for moderate and large events*
- *Provide easy first-motion focal mechanism solutions*
- *Improve volcano monitoring networks.*

Problems



- *For large events: magnitud does not agree with USGS M_w .*
- *For large events outside the network: locations are at the limit of the network.*
- *For shallow, small events, locations are not very stable.*
- *As the data base increases, the longer it takes to review seismic traces.*