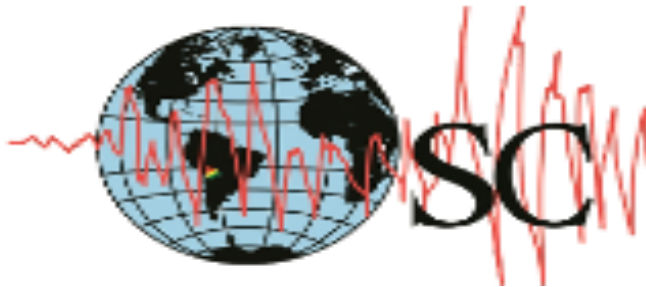


# BOLIVIAN NETWORKS AND SEISMICITY

## National Geophysical Networks in Latin America – IRIS Workshop



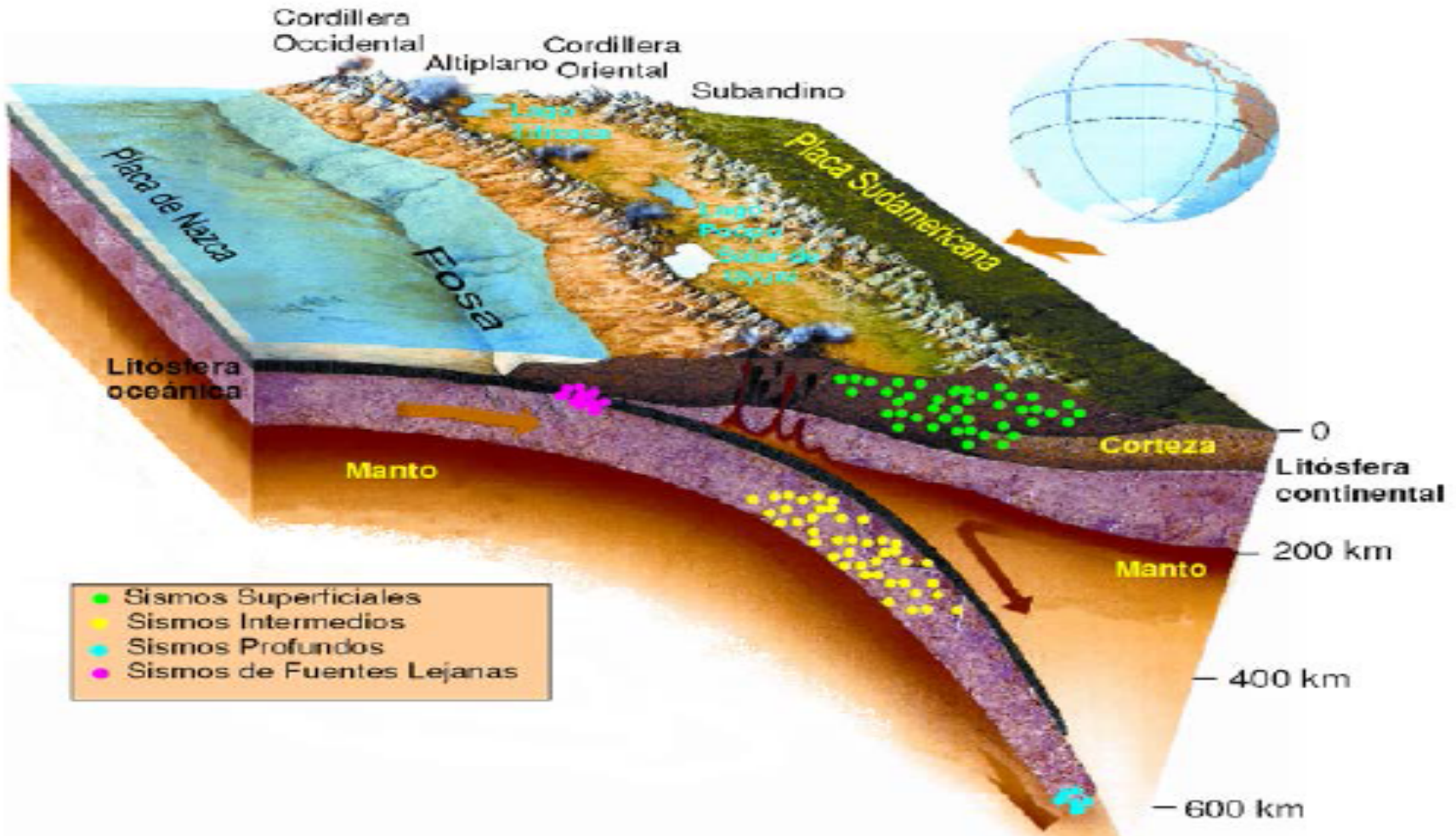
Gonzalo A. Fernández M.  
Head of Electronic Section.  
Observatorio San Calixto.

# 1. INTRODUCTION.-

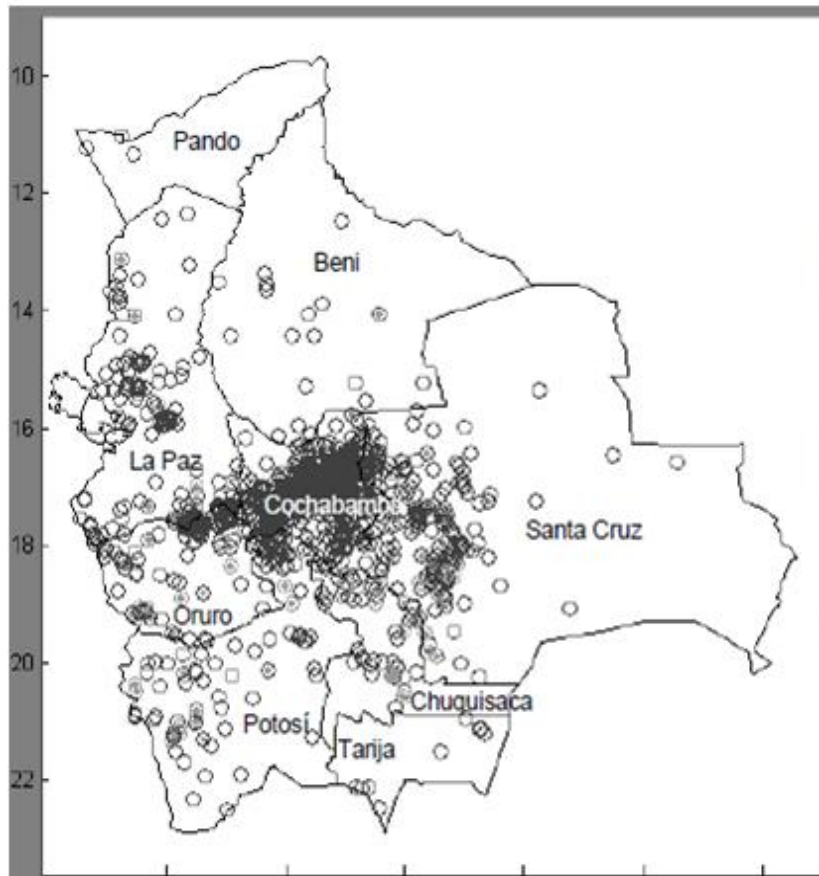
- Non Profit and private Institution related to Seismic and Infrasound Monitoring.
- 102 years reporting and producing bulletins for all seismicity in Bolivia.
- Hosting three IMS-CTBTO stations PS06, AS08, IS08.
- Working with CEA/DASE French and AFTAC U.S. collaboration.



# 2. BOLIVIAN SEISMICITY.-



## 2. Bolivian Seismicity (i).-



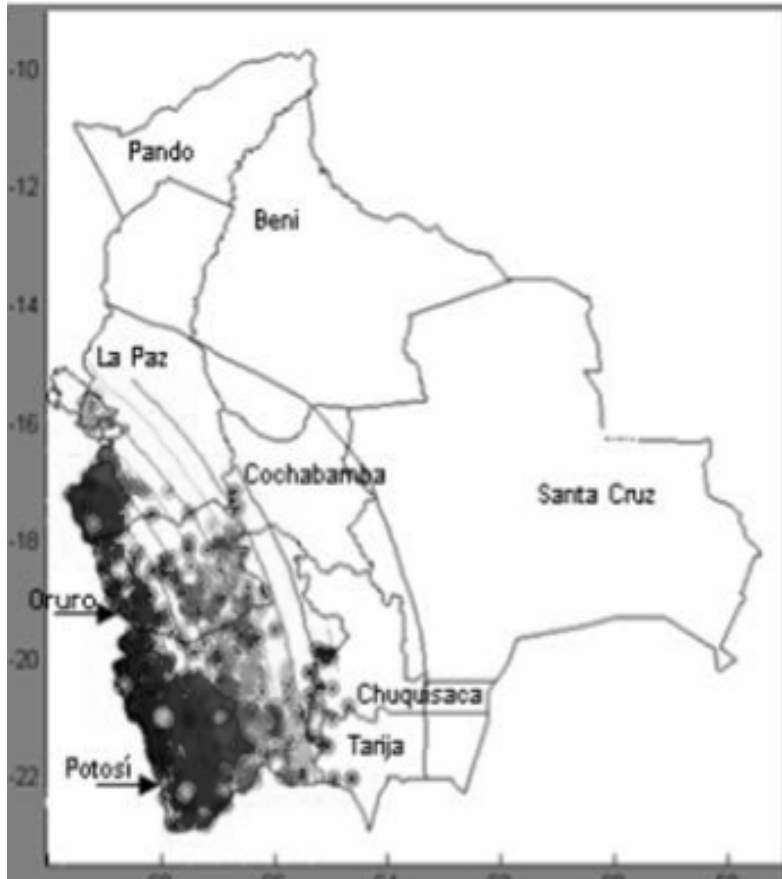
### •Seismogenic Sources according the origin:

- Depth lower than 75Km, associated to areas that have the continental deformation.

### •Sub – Source related to the potentially active faults:

- Depths greater than 5Km, frequently magnitudes are equal or lower than one.

## 2. Bolivian Seismicity (ii).-



- **Seismogenic Sources due the subduction process:**

- Originated inside the Nazca Plate, high magnitudes with deeper depth.

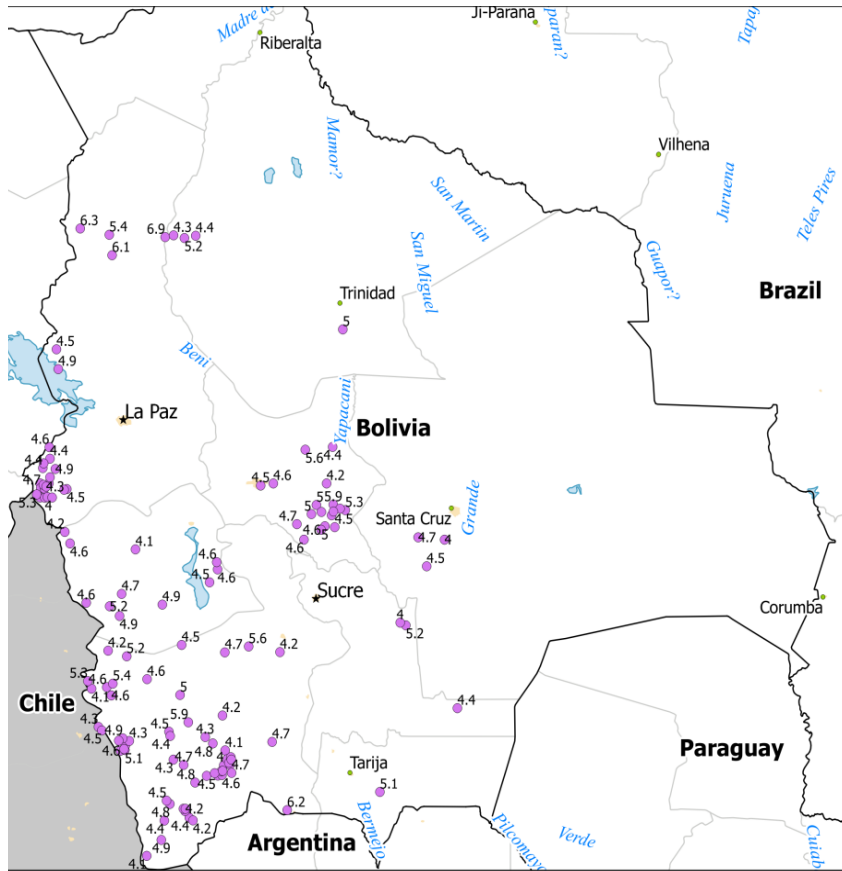
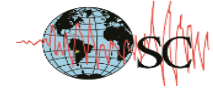
- **Intermediate earthquakes:**

- From 100Km to 350Km, around La Paz, Oruro and Potosí.

- **Deep earthquakes:**

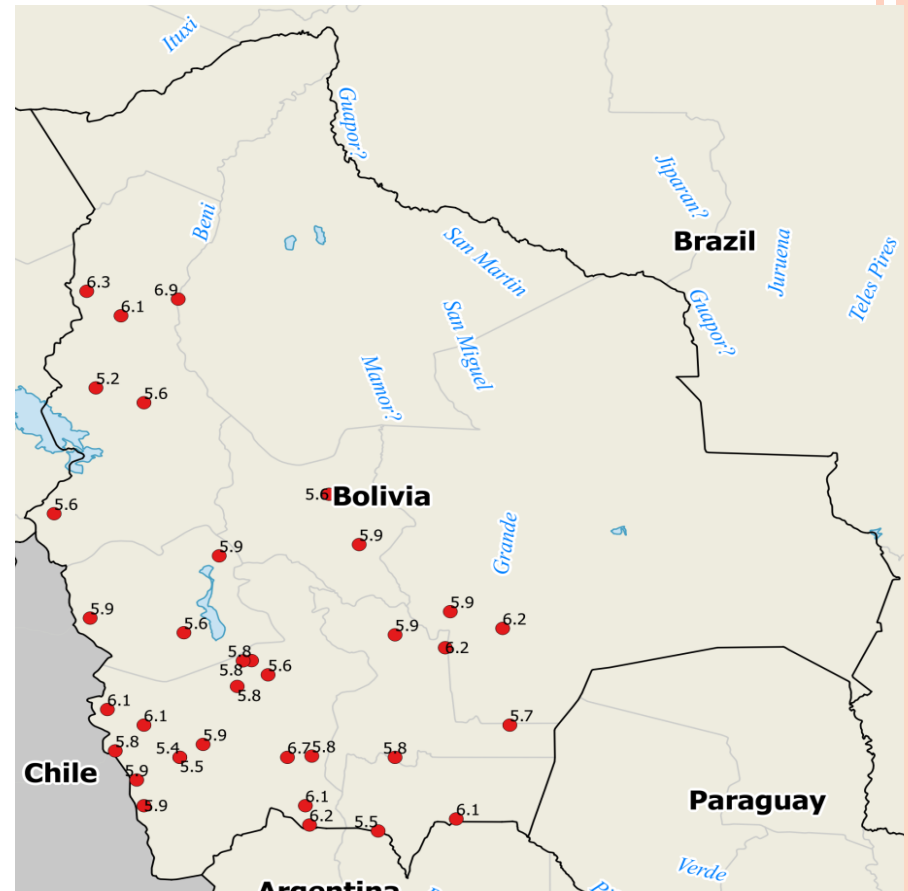
- From 500Km to 700Km, around Beni, Santa Cruz, Tarija and La Paz, the mean magnitude is 8 Mw.

# 2. Bolivian Seismicity (iii).-

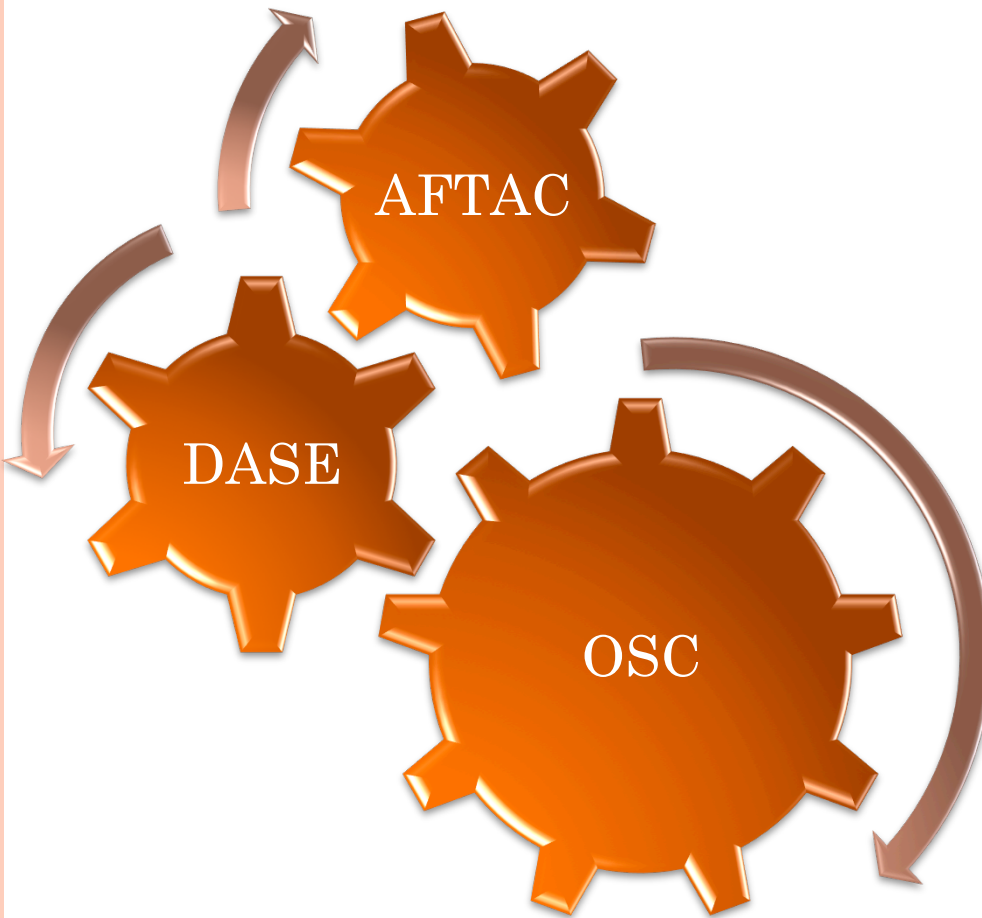


*Seismicity >4*

*Seismicity >6*



### 3. BOLIVIAN SEISMIC NETWORKS.-



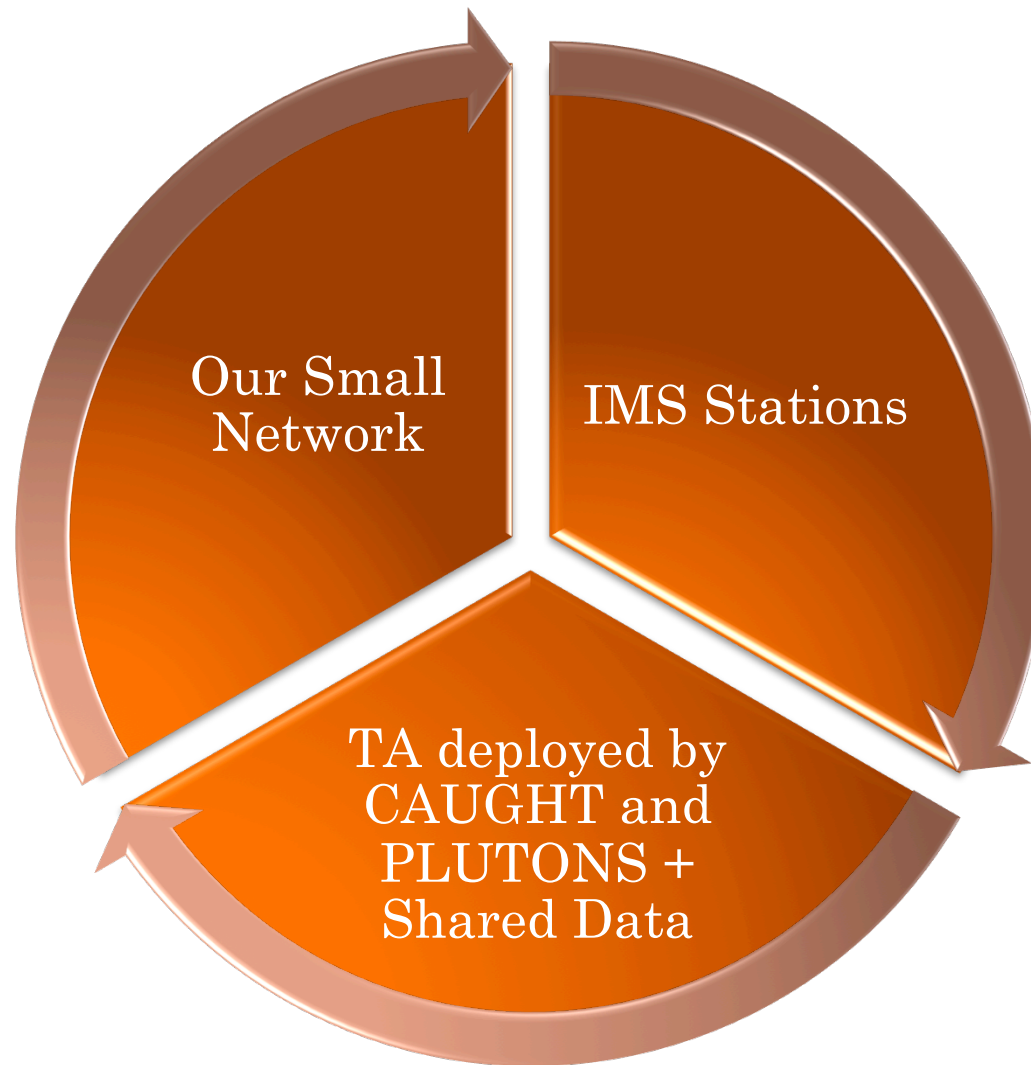
*Main Network*



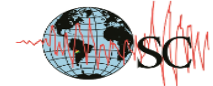
*Temporally Stations  
& Projects*



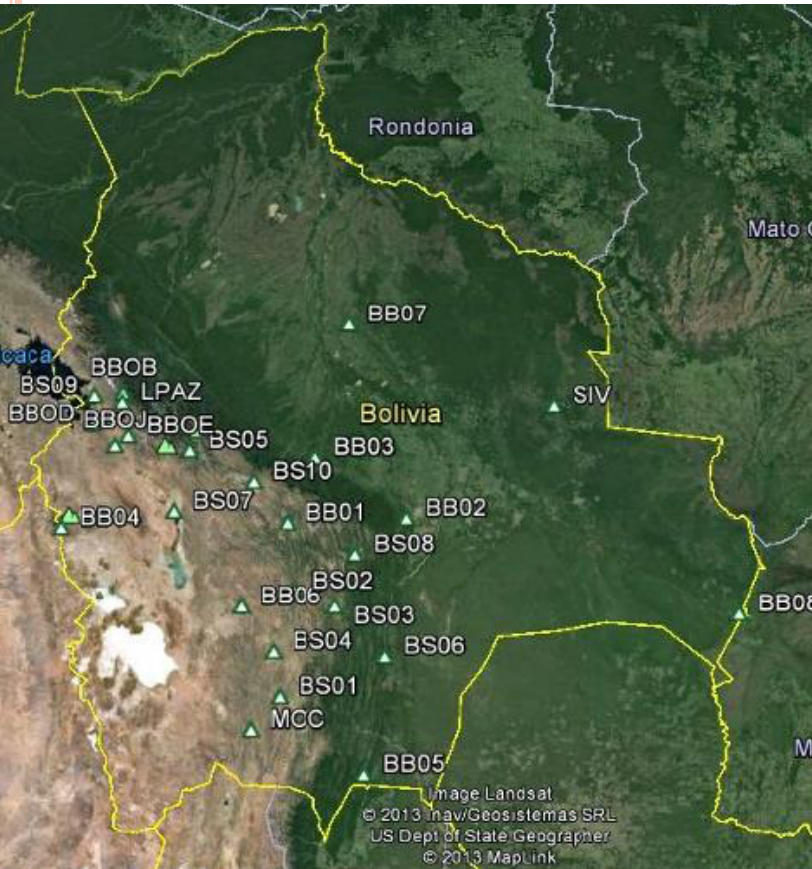
### 3. BOLIVIAN SEISMIC NETWORKS (II).-



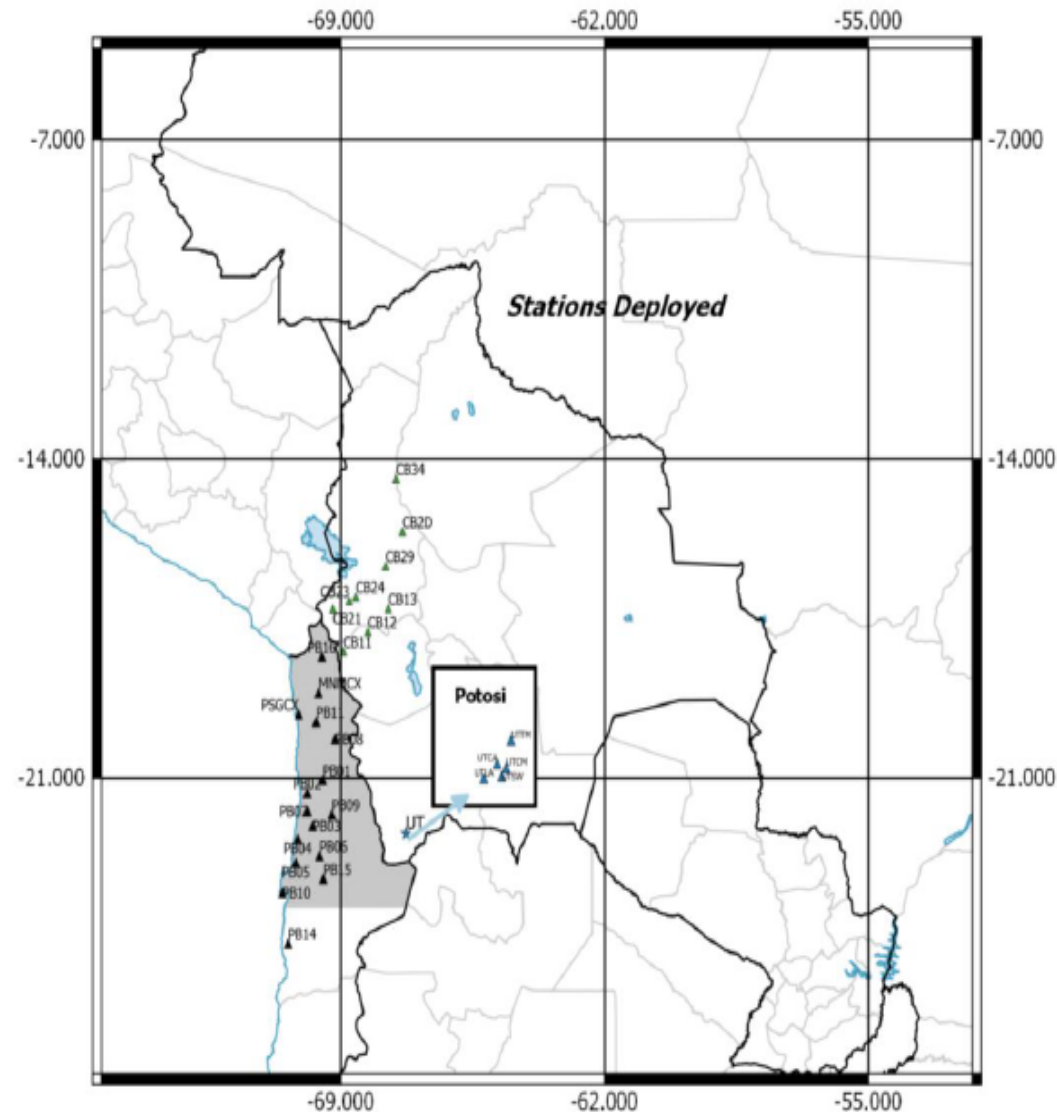




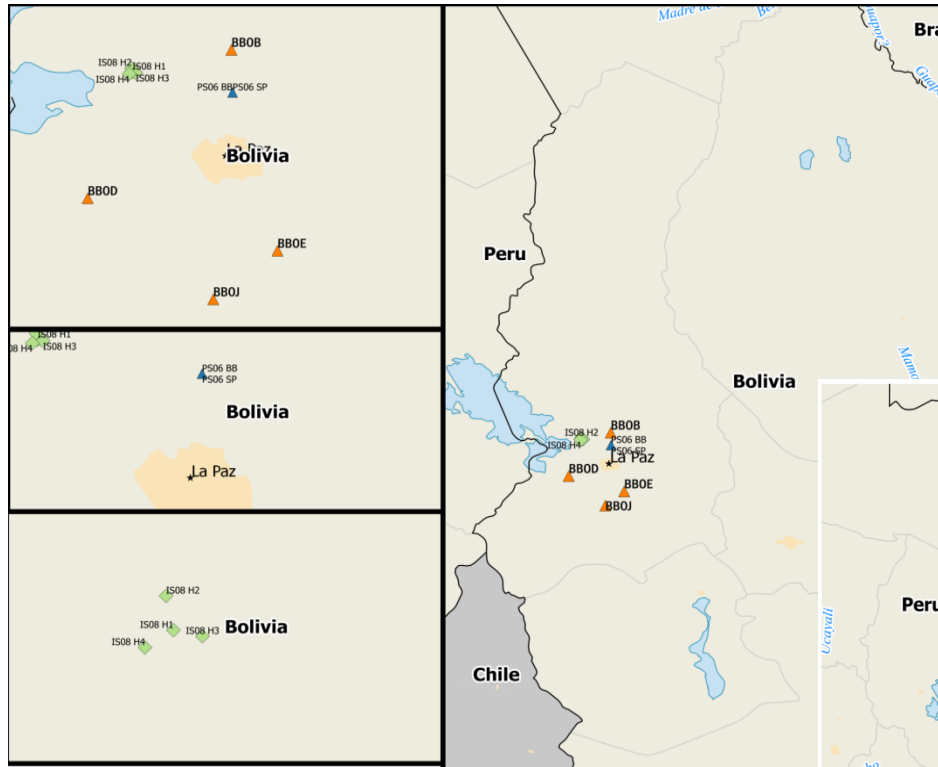
# 3. BOLIVIAN SEISMIC NETWORKS (III).-



*New Own Network  
“Closed” due to lost  
of Telecom Company  
Support*



# 3. BOLIVIAN SEISMIC NETWORKS (IV).-



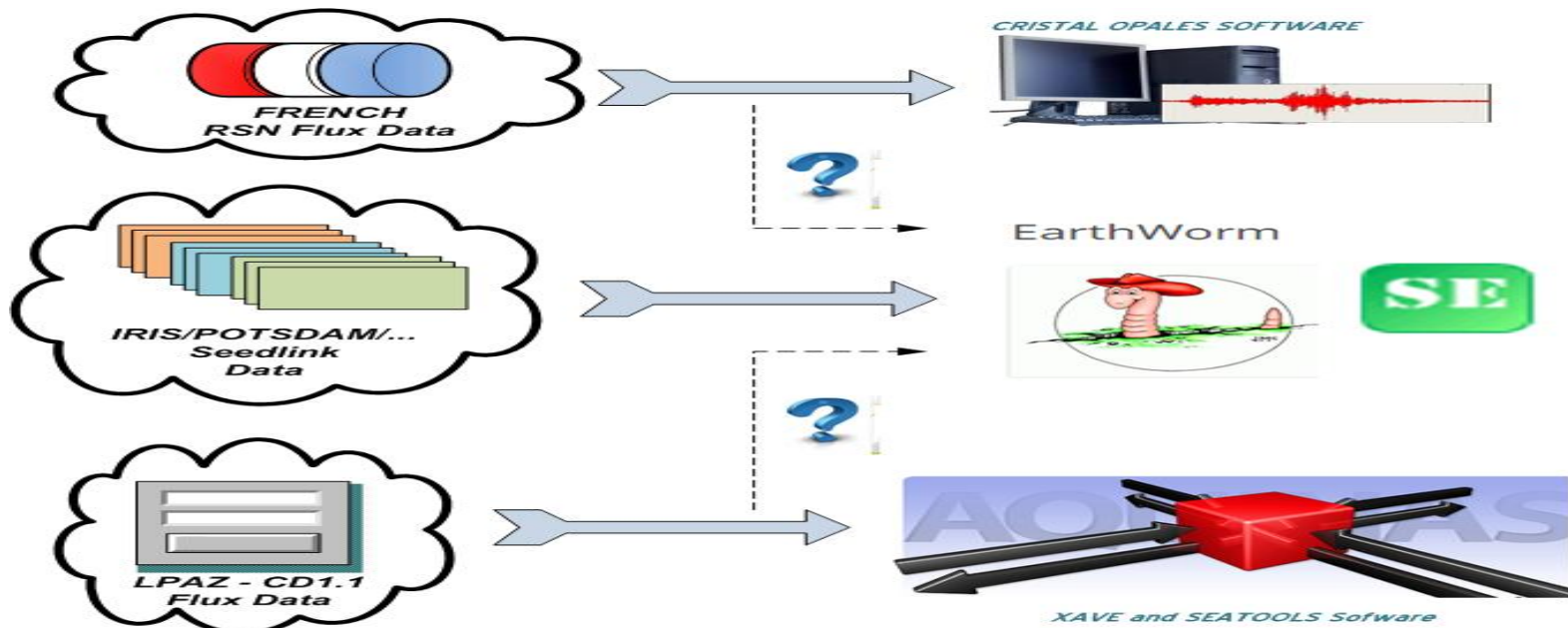
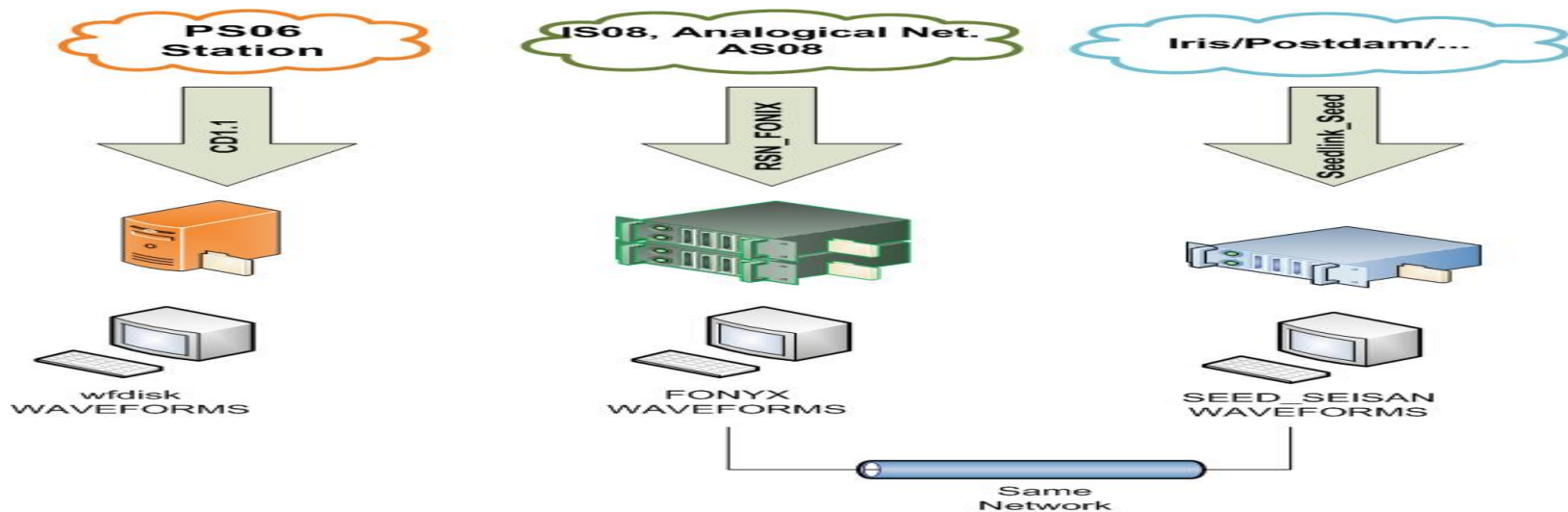
*SP from French Cooperation.*

*BB from US Cooperation (IMS network).*

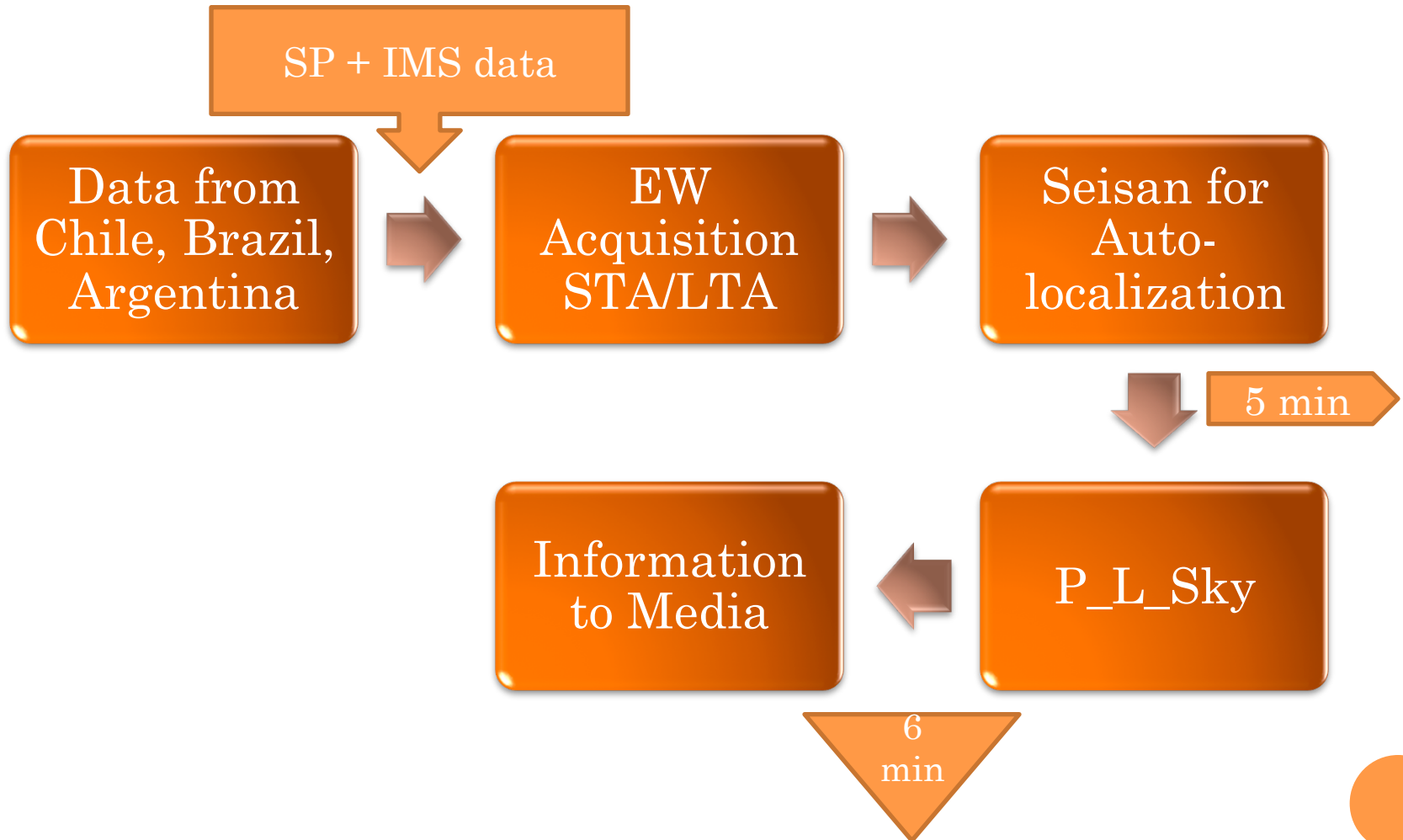
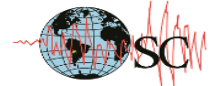
*LP's from French Cooperation (IMS network).*



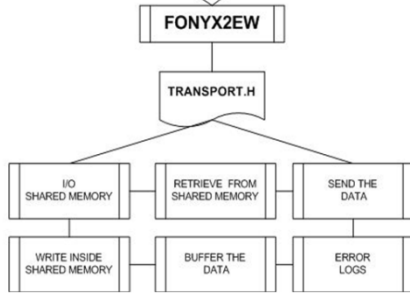
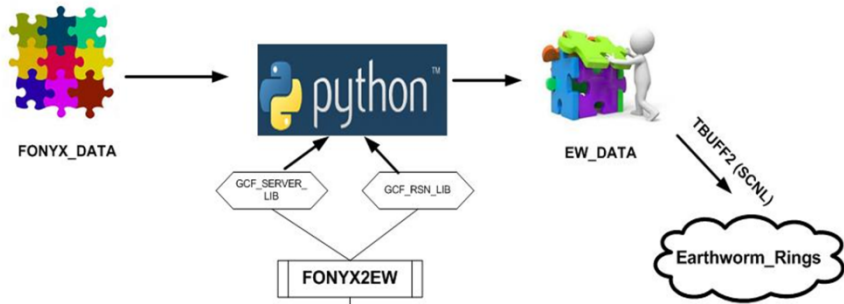
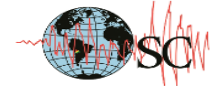
# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES.-



# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES (I).-



# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES (II).-

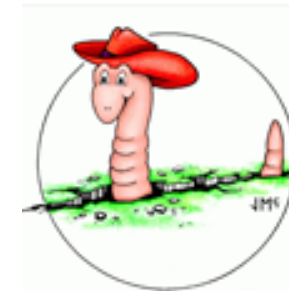


*SEISAN\_AUTOSIG*



*rsn2ew*

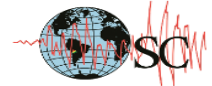
*seedlink*



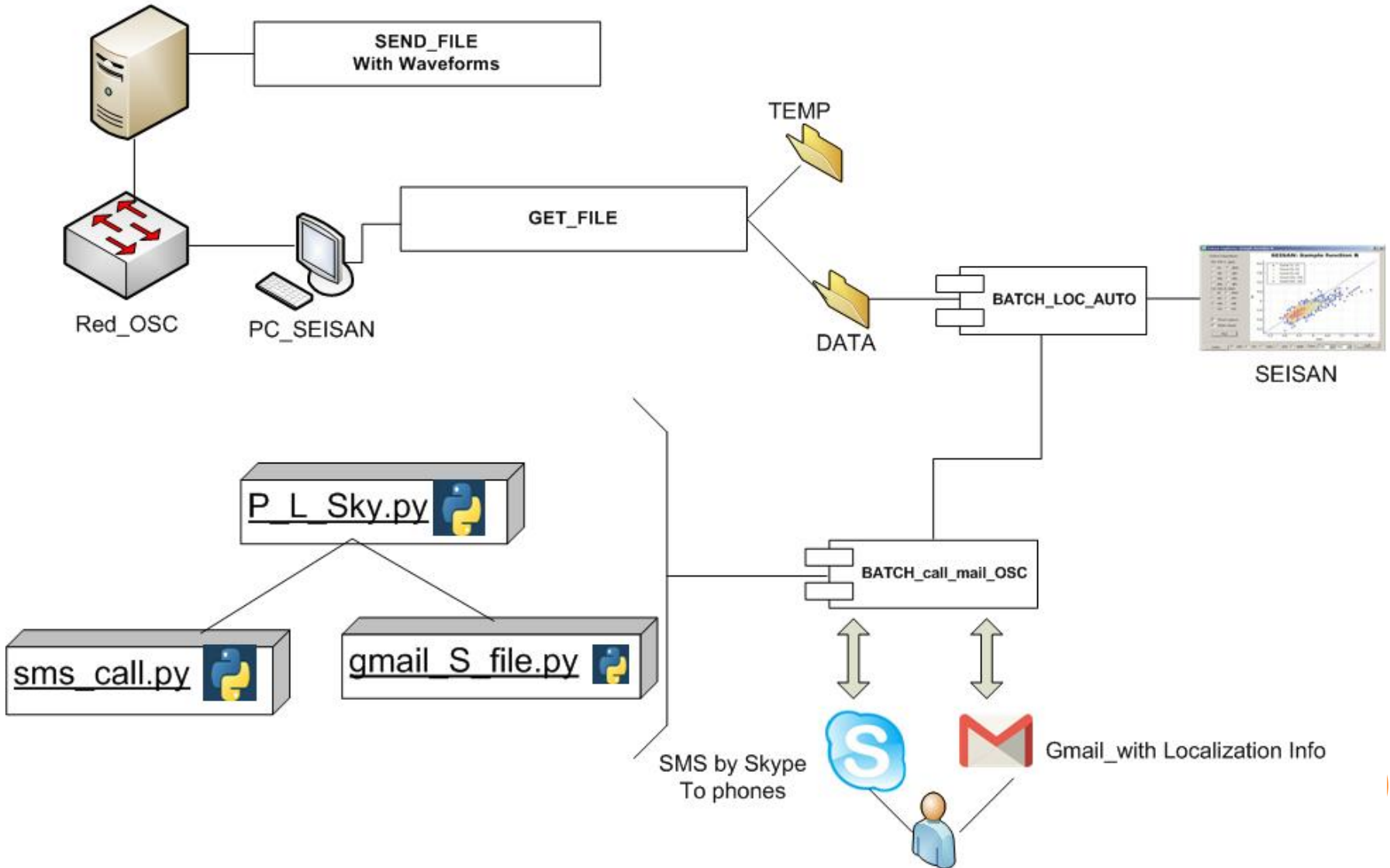
*EW\_STALTA\_fine tuning*



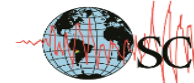
# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES (III).-



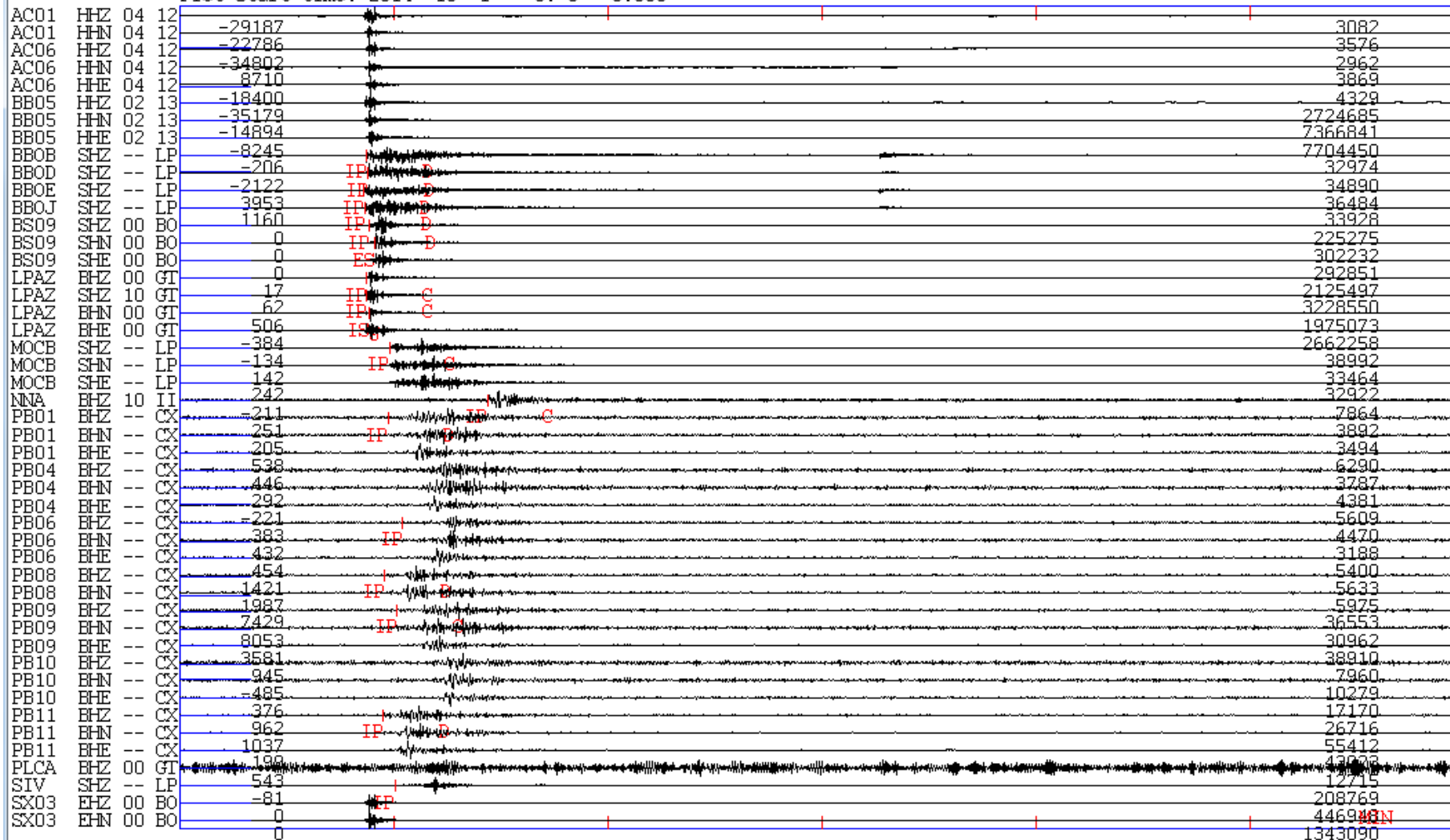
SERVIDOR\_EARTHWORM



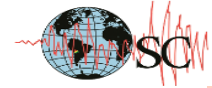
# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES (IV).-



2014 10 1 0608 28.2 L -16.998 -67.165 0.0 OSC 1933.9 7.6WOSC  
 Plot start time: 2014 10 1 6: 0 0.000



# 4. HOW TO GET A FAST SOLUTION WITH LOW RESOURCES (V).-



Evento Sismico 26/ 5/2015 11:03:20.3

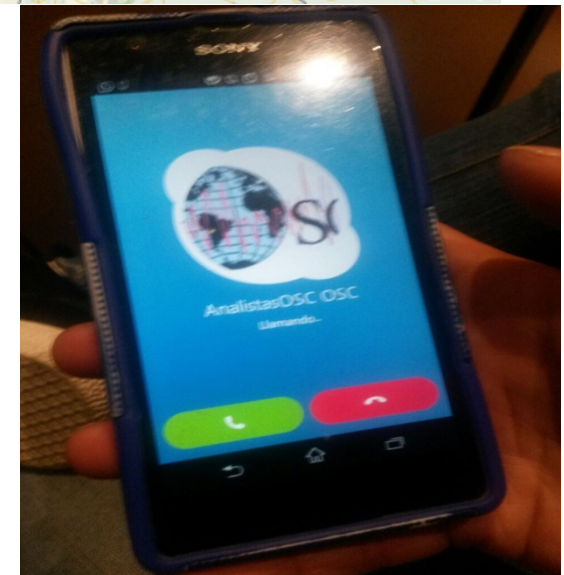
test.mail.osc@gmail.com 8:54 AM (5 minutes ago) ☆  
to emmanuel.gallen ▾

Nuevo evento sismico !  
Fecha = 26/ 5/2015  
Hora = 11:03:20.3  
Magnitud = 3.0  
Profundidad = 11.5  
Indicador de distancia = R  
Localizacion = -22.025,-68.602  
Mapa = <https://www.google.com.bo/maps/place/-22.025,-68.602>  
Numero de estaciones = 12  
Residu = 0.5



*From 4 to 6 minutes, this information helps the analyst to calm down the media*

*Of course our app is open and waits some feedback...to improve it and share it*





## 5. HIGHLIGHTS.-

### Sharing Data

Virtual Networks

Free Software + updates + support



### Not Complaining

Easy is better than Complex

If apply; take certified stations as reference



### Open Mind

Apply new tools + GitHub

Share Experiences

A sunset over the ocean with a lighthouse beam visible on the horizon. The sky is filled with soft, golden light, and the sun is a bright orange circle just above the dark sea. A thin vertical line, likely a lighthouse beam, is visible on the horizon to the left of the sun.

**Thank you for  
your attention**