**CRL Technical Meeting 2 november 2022**

**Report**

**1) Modems replacement, 3 models has been proposed :**

1. Model Teltonika RUTXR1 Dual Sim (Madani)

 ( <https://teltonika-networks.com/fr/product/rutxr1/> )

  *4G with USB key connection, double power supply. The best advantage it is possible to*

 *have a local copy of the data directly on the modem very useful and easy to retrieve*

 *data from station. A quotation of MhzShop (France) for 25 units is ~10K euros...*

1. Model Teltonika RUT230 (Vasileios)

 ( <https://teltonika-networks.com/downloads/en/rut230/RUT230_Flyer-v1.1.pdf> )

 *Is it a 4G modem ?*

 *Advantage compact and low power consumption more adapted for the stations on solar*

 *panels. Cheaper than the model RUTXR1 !*

 *3. Model Teltonika RUT240 or RUT241 (George)*

 *(<https://teltonika-networks.com/product/rut240/>)*

 *4G modem. Low power consumption. Modems at NKUA stations are now replaced with RUT240 or RUT241*

1. Model Teltonika gamme RUT950 (not sure it is the reference you send me Christos?)

 ( <https://teltonika-networks.com/product/rutx50/> )

voir <https://teltonika-networks.com/compare/?networking=rutxr1,rut955,rut956>

It is not necessary to choose 5G routers, in a hand the 4G is LTE and it will stay for a while … more than 10 years because the 5G is based on the 4G layer technology, and on the other hand to choose 5G modems will increase the budget replacement as the price of the 5G modems and 5G contracts are expensive at this time. We need also to choose the number units with enough spares to have 5 years stock replacement. The final choice for the modems upgrade between the reference (1), (2) and (3) will be decided after a new technical meeting in December.

**2) New vpn keys 2022 and the new server in 2023:**

*If you have already received your new openvpn key, please send me your IP 10.8.X.X, that you have in the CRL network otherwise send to Alexander and me a request by email to get your new one. Indeed we have to clean a little, many IPs are no longer used...*

Currently the openvpn server is numerobis and it manages the CRL key, but in 2023, there will be a migration on the new server ovpncrl (VM). This migration, we hope, will be transparent and without getting a new key...

**3) Redeployment of the antenna Magoula and overview on ALIK, PSAR and ZIRI:**

* MG0, MG02 are vandalized and some equipment have been stolen, the rest removed in June 2022 and is stocked at the University Patras.
* MG04 is OK and has been updated in July 2021 to fix the GPS Guralp bug.
* MG03, MG05, MG06 and MG07 are now accessible since June 2022, the tall grass has been cut around stations. The stations are running but with a bad date (GPS Guralp bug).
1. Keep only MG06 at the site Magoula ?
2. PSAR, the station has its power supply provided by the owner of the house, close to the station. But it is not secure at all and with a lot of failures, should we put it on solar panels by re-using a support structure from the site Magoula ?
3. Should we redeploy 2 complete stations from the site Magoula on the sites of the stations PANR and ZIRI, to improve these both sites ?
4. ALIK, the little vault is no more suitable and the electric pylon bringing the power to the station is unstable and broken, keep the station alive ? The site also needs a complete station sensor + digitizer ...
5. AIOA has a Taurus digitizer problem, re-use a digitizer Guralp from the antenna ?
6. TRIZ accelerometer is not working
7. MALA deep sensor is not working, the present sensor should be reinstalled
8. What is the problem at PYRG?

A meeting of seismological colleagues will be scheduled and they will discuss all those points to make the best decisions for this redeployment.

**4) some GNSS sim cards Vodafone that are not included in the official contract package of the vodaphone:**

For the permanent stations, we need to find a solution to include this cost in the annual invoice provided by the University NKUA. How to do ?

Ask Vodafone more official sim cards (one could be kept in case of field problems)? What to do with the MGxx SIM cards? What was done with MG00 SIM, if stolen should be declared so that we don’t have to pay any more ?

Or try to find an alternative provider to make new contracts but could be more expensive ( Matooma : https://www.matooma.com/en/ ) ? Less time to recharge or to change sim cards is more time on the field to be efficient and to fix problems more important !

When installing new (4G or 5G modems) all old SIM cards must be replaced

**5) CRL data 2021, checked and completed data inventory:**

* AGEO EHx : 2021.001 to 2021.199
* AIOA EHx : 2021.001 to 2021.249
* AGRP HHx : 2021.001 to 2021.149
* AGRP HHx : 2021.219 to 2021.263
* AGRP HHx : 2021.296 to 2021.365
* AGRP BNx : 2021.001 to 2021.149
* AGRP BNx : 2021.296 to 2021.365
* AGRP HNx : 2021.001 to 2021.149 ( Triggered strong motion 200 Hz )
* AGRP HNx : 2021.219 to 2021.365 ( Triggered strong motion 100 Hz or 200 Hz depending date )
* DIMT EHx : 2021.001 to 2021.202
* MG00 HHx : 2021.001 to 2021.149
* MG02 HHx : 2021.001 to 2021.149
* MG02 HHx : 2021.253 to 2021.339
* MG03 HHx : 2021.001 to 2021.149
* MG04 HHx : 2021.001 to 2021.149
* MG04 HHx : 2021.207 to 2021.365
* MG05 HHx : 2021.001 to 2021.149
* MG06 HHx : 2021.001 to 2021.149
* MG07 HHx : 2021.001 to 2021.132
* PYRG EHx : 2021.001 to 2021.263   (Triggered strong motion 100 Hz or 200 Hz depending date)
* ROD3 HHx : 2021.051 to 2021.290
* ROD3 HNx : 2021.051 to 2021.290 (Triggered strong motion 100 Hz or 200 Hz depending date )
* TRIZ HHx : 2021.001 to 2021.319
* TRIZ HNx : 2021.001 to 2021.319 (Accelerometer is out of order)

Comments : it seems that the MGxx data which are just delayed due to the GPS bug, may be recovered very fast. May be avoid the distribution of data when we know that the sensor is not working.

These data will be archived on the RESIF base I hope before the end of the year. At this time I cannot transfer this data on the ENS server Ephesite due to a problem of right access. I have informed Hélène about this problem… The protocol of CRL data archiving will change during the year 2023. To update the CRL database regularly with the RESIF base (managed by the EOST Institute), a server at EOST will be synchronized directly with the server crlvpn.ipgp.fr at IPGP. The IPGP base is limited to 3.5 years of data as a ring buffer.

Is there any interest to maintain the database at ephesite and Géoazur?

**6) IPGP ssh gate and new Wiki CRL:**

* **IPGP ssh gate:**

This IPGP ssh gate is provided by the server VM crlrvpn.ipgp.fr. This server is already used as a seedlink server to distribute the real time data of the CRL network as complementary to the server NKUA at Athens. The IPGP ssh gate will be opened during 2023 for the CRL colleagues who are interested to access the QC data, in case the data they need is not available yet throughout the base RESIF. Indeed there will be a time latency between the IPGP and RESIF bases as the automatic completion process will run at IPGP..

* **Wiki CRL:**

This wiki <https://resifop.ipgp.fr> (comments: I cannot connect to this site) (Nextcloud platform https://nextcloud.com/fr/ ) is dedicated to field work and the metadata of the stations: photos, dataless, technical information, datasheet, protocols to discharge data, IP address, firewall rules etc … This CRL database is being built and structured with racine directories (constituted by the station names). And under each station, users are free to organize their shared information like they want. A powerful search by a key word is available.

**7) The upgrade of the server NKUA:**

* Depending on the funding for 2023 : New one or Old one ?
* In case of enough funding my proposal <https://www.dell.com/en-uk/shop/enterprise-deals/smart-selection-poweredge-r250-rack-server/spd/poweredge-r250/per2501a> (budget ~1300 euros). Otherwise we should recycle an old one, I’m discussing with the SI of IPGP to find a Server with good capabilities we could have as gift to replace the current serveur NKUA.
* Another Idea ?

**8) A need of the second access to the router Vodafone !?**

We should have a second access to the Vodafone router by another basic server inside the University NKUA, is it possible ? This server will just have the task to route connections to the CRL stations in case the server NKUA is down … As the server Chile2 at IPGP cannot have direct access to the Vodafone router.

When the first server NKUA is down, chile2 could take the relay as a main seedlink server by accessing the stations throughout the second server NKUA. This second server of course should be in another place inside the University NKUA to secure the service.

Can we have an estimation of the number and duration of NKUA failures in the 10 last years?

If there is a power or internet problem, the highest possibility is that there will be exactly the same problem in the whole building of the Department of Geology and Geoenvironment of NKUA. So, I am not sure how this would help…

If we could proceed like that we will greatly improve the real time data distribution and we will also improve the quality of the continuous data. It means less requests to retrieve the miniseed data from the stations.