

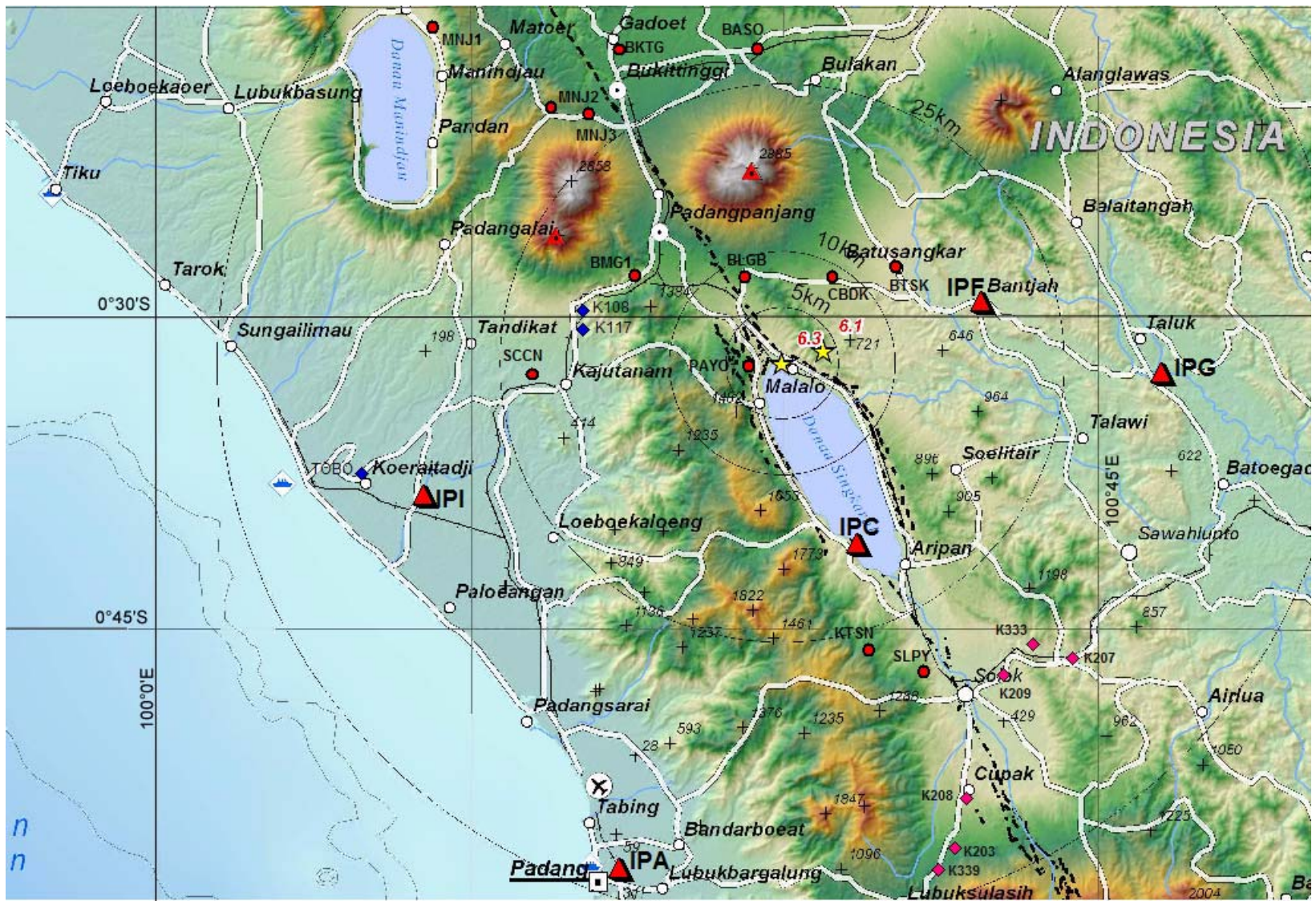
First GPS Campaign, JUNE 2007

This project is realized within the cooperative research between ENS and ITB, with the contribution of Agence National pour la Recherche (ANR) france.

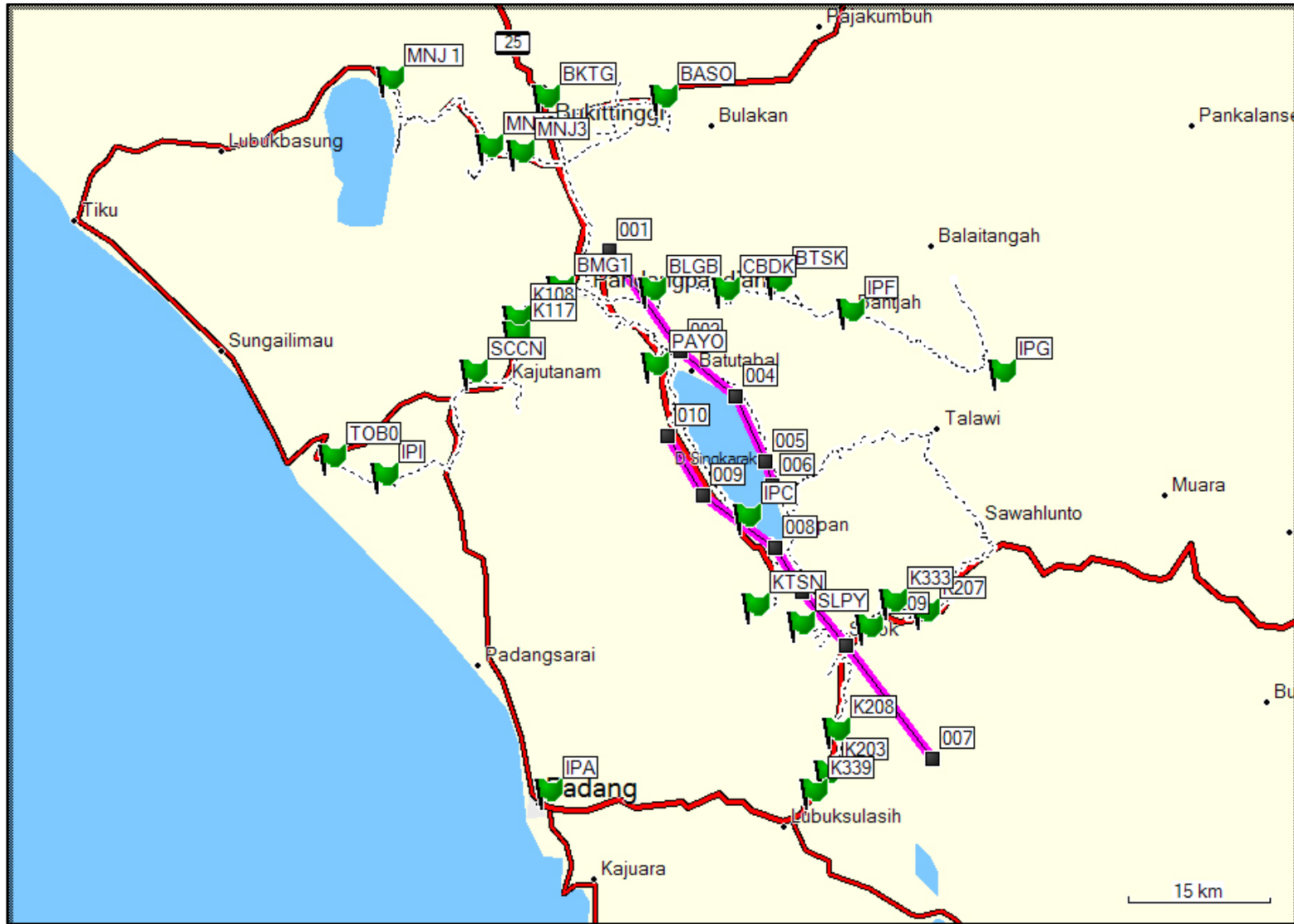
This first campaign aimed to install new points and remeasuring existing gps points that has been installed in terms of cooperation between France and Indonesia 1991 and 1994. the geodetic studies using gps in this region is focusing on the instantenous velovity in the vicinity of the fault segment in order to allow an estimation of its seismic hazard particularly after Mw. 6.4 solok earthquake in 6 march 2007. We have been carrying a gps campaign for about 23 days since 6-28 juin 2007.

28 sites have been measured in this first campaign which consist of 5 points existings (IPA, IPC, IPF, IPG, et IPI) , 9 of Bako points (TOBO, K117, K108, K339, K203, K208, K209, K333, et K207) and 14 new istalled sites (SCCN,BMG1, BLGB, CBDK, BTSK, PAYO, KTSN, SLPY, MNJ1, MNJ2, MNJJ3, HTTA, BASO). Look for the map and garmin route mapsources map for details.

The measurement is done with 6 receivers astech Z-extreme, for at least 1 days of measurement in each sites, except (BMG1 padangpanjang measured continuously for at least 10 days, SCCN 4 days, IPA 4 days, IPI 3 days),



Map UNOSAT elevation, west Sumatra, and the GPS sites (source, disaster charter).



Map route Garmin, west Sumatra, and the GPS sites (source, mapsourc v.6.12).

Measurements GPS Campaign JUNE 2007

A. Existing Sites.

There are nine existing sites that have been measured in the previous campaign GPS franco-indonesian, this year we've manage to find and remeasure only 5 of 9 sites...

All of these existing sites were the concrete beton type,

1. IPA

CODE : IPA0
NAME : IPA
LOCATION : M. Djamil Hospital, Padang
Lat : 00° 56' 37.77" S
Lon : 100° 22' 09.28 E

Measuring Apparatus : Triangulare Plate (check with the logsheet)



Additional information :

This site is situated in M. Djamil Hospital, a triangulation point of BAKO, 2 meters high, for the measurement we need a very high modified tripod or you can use also the triangulare plate. Permission is necessary since it is situated in the biggest public hospitals of Padang.

Contact : H. Aguswan Nurdin, MD, MHA (head of dept physical medicine and rehabilitation)
phone : +62.751 32372 or email at abang22@indosat.net.id

recomandation :

Actually this site is not good for measurement gps, as indicated on the pictures and documentation, this site was sorrouded by tall buildings, the obstruction is awefull, most of the times satellite that can be received is only between 4 and 5, and sometimes only 2 of them.

2. IPC

CODE : IPC0

NAME : IPC

LOCATION :

Lat : 00° 40' 57.94" S

Lon : 100° 33' 28.37" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

Situated on the left side of the lake Singkarak. Together with IPD, (we couldn't manage to find this site, cause it seems that the site have been razed down, due to the construction of the restaurant, pic attached...) this two points representing the near lake points gps that installed earlier by the franco indonesian cooperation.

The acces is not too difficult; the nearest village is Saniang baka, Muaro pingai Kecamatan junjungsirih. After SMAN Singkarak you can find a dirt road that we'll lead you up to the hills, this road is accessible by usual car, when it is dry, if it is raining you can't hardly climb up.. Otherwise by foot is only 10 minutes walking (350 m).

Not so easy to find, you have to equipt you self by a handheld GPS, because it is situated in open area where nothing can be the made as a repere. Prepare for the camp for the measurement.

IPF

CODE : IPF0
NAME : IPF
LOCATION : Tanjung Emas.
Lat : 00° 29' 15.67" S
Lon : 100° 39' 22.81" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This is also one of the site that have been installed in 1991 by French and P3G indonesia, located at madrasah Tanjung emas. According to the coordinate and also the description left by last mission 1994, we've manage to find it but fisically the pilar is different with four others existing points. We'll verified if it is exactly the same points that have been built by last gps campaign after processing the data.

IPG

CODE : IPG0
NAME : IPG
LOCATION : Taluak sijunjung.
Lat : 00° 32' 40.39" S
Lon : 100° 48' 02.85" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

Situated in the school yards of SD 42 tiga Tumpuak sijunjung.

We almost cannot find this site, because before, the site is burried under the school yards, but thanks to the description of the last mission and also with the help of local people that still remember exactly the location of the pilar we finnally manage to find it.

Contact

recomandation : attention to the kids, should make a fence of ropes to avoid them touching the tripods, especially during the day.

At nigh the school guards who lives not to far for the school can participate in watching the receiver, if necessary with permission by the principal we can sleep in one of the class room

IPI

CODE : IPI0
NAME : IPI
LOCATION : Polsek Pauh Kamar, Pariaman.
Lat : 00° 38' 37.39" S
Lon : 100° 12' 45.04" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

One of the site that have been installed in the cooperation between French and Indonesian in 1991 and 1994, situated at the police office Pauh Kamar, Padang Pariaman, when we find it the site still in perfect shape. Use tripod to measure it actually we can put the receiver in site the police station or on of the house near it, but last time measurement we have had a slight misunderstanding with one of the police asking for a certain amount of money to surveille the receiver. By the end of the measurement we found that it isn't necessary to start giving the money, otherwise you'll end up with the bad habits forcing to pay some money in each measurement.

New Sites, with ENS Marker.

SCCN

CODE : SCCN
NAME : SCCN
LOCATION : BMG climatology Sicincin.
Lat : 00° 32' 44.4" S
Lon : 100° 17' 52.8" E

Measuring Apparatus : (check with the logsheet)



Additional information :

This site is situated in the office of BMG Climatology Sicincin, one marker ENS had been installed in a concrete structure near the office.

Contact :

Contact : budi dwinanto, S.Si (climatologist)

Address : Jln. Raya Padang – Bukit tinggi KM51, Sicincin Padang Pariaman 25584

Telp : 0751 675100, 081535231063

Email : dwinanto_yoi@yahoo.com

recomandation : The site is fully supported by the electricity and the receiver can be put safely by using **20 meters** of antenna cable just right in to the observatory office.

BMG1

CODE : BMG1

NAME : BMG1

LOCATION : BMG office Padang Panjang.

Lat : 00° 27' 57.88" S

Lon : 100° 22' 49.38" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

This site is situated in the office of BMG seismology Padang Panjang, we constructed a concrete pillar of 1 m deep and put on top of it one marker ENS representing the point.

Located just inside of the parc instrument of BMG make it well and safely protected, the only inconvenience is that there is no source of electricity near the sites, or probably not in the short time, this site is perfect for the future gps permanent station.

Contact :

Sumarso, head of BMG Padangpanjang

Email : Stageof_ppi@yahoo.com

Telp : 08153586690

recomandation :

MNJ2

CODE : MNJ2

NAME : MNJ2

LOCATION : Maninjau, Bukittinggi.

Lat : 00° 19' 52.8" S

Lon : 100° 18' 48.1" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

New site that we've build for the transect bukittinggi, located at the Kecamatan 4 koto. It was name after the lake Maninjau situated not to far from the point.

Contact

recomandation :

BTSK

CODE : BTSK
NAME : BATUSANGKAR
LOCATION : Batusangkar
Lat : 00° 27' 31.1" S
Lon : 100° 35' 15.5 E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

The name of the village is Limakaum, this site is an implanted ENS marker on top of a basalt rocks, good sky visibility even though underneath one big coconut tree

recomandation :

Not far from the site, you have a house with electricity, so **with 20 m antenna** cable, this site is perfect because you can put the receiver inside the house and perfectly watch and guarded, so if in any circumstances you have to leave the receiver you can make sure that this site is OK.

MNJ3

CODE : MNJ3
NAME : Maninjau 3
LOCATION : Maninjau road Km.9
Lat : 00° 20' 11.3" S
Lon : 100° 20' 35.2" E
Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

Location , Jalan Maninjau km 9. on of the transect bukittingi that we installed, together with MNJ1 and MNJ2 this site represent the left side of the block that we presume divided by the fault segment in bukittinggi, the name maninjau comes from the road that leads you to the lake Maninjau, since the site is passed by the only road that lead to Maninjau..

recomandation :

The point is implanted in the rocks and it is in the middle of the rice fields.. you have only one small warung, at the road, at around 200 meters you can see the point from the road, no houses nearby, if you have no choice than to leave the receiver during night, this site is considerably safe. For far away from small warung you can only see the big rocks but hardly to see the antenna.. But we do suggest surveillance at least from local people who stay in this small warung.

PAYO

CODE : PAYO
NAME : PAYAU
LOCATION : Desa Payau rapuih, kecamatan tanah datar.
Lat : 00° 32' 18.77" S
Lon : 100° 28' 15" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

Also a new site installed by ENS and ITB, manifested with the marker that implanted in the rocks. Type basalt like those we could only find in this area. The name of the village is PAYO rapuih, Malalo. Tanah datar, located near the small lake, that local people use to take bath and sanitary purposes.

recomandation :

No electricity and next to it, you have one small Surau or hut, that can be use as a shelter to watch the receiver. If you might get lucky just 500 meters above and up the site you have another village to sleep during the night.

To acces this site is easy, but prepared for a good ride, the road is covered by good asphalt but the slope is heavy, many sharp turns with more that 30 degrees slopes. For going up, if it is not using car, you can use motorcycle for 15.000 rupie. AR,..

MNJ1

CODE : MNJ1
NAME : Maninjau 1
LOCATION : Desa Bayua, Kecamatan Tanjung Raya, Kabupaten Agam.
Lat : 00° 16' 03.0" S
Lon : 100° 13' 15.5" E

Measuring Apparatus : (check with the logsheet)



Additional information :

Location Bayua, Kecamatan Tanjung Raya Kabupaten Agam. This site for now is the farthest site in the left site of transect bukittinggi. Also manifested as a marker implanted in the stone, and still situated in the middle of the rice field.

Noted when the last measurement using adaptor ens, impossible to screw the adaptor entierly so there was a gap of 6 mm.

CODE : BLGB
NAME : Balaigamba
LOCATION : Desa Balaigamba, kecamatan Tanah Datar.
Lat : 00° 28' 01.13" S
Lon : 100° 28' 03.54" E
Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

Village Balai gamba, tanah datar..

Implanted in the rocks in the middle of the rice field, access to the points only reach by foot from the village, points represented by a marker. Since it is 300 meters away from the nearest house, the point is quite safe if you have to leave it at night.

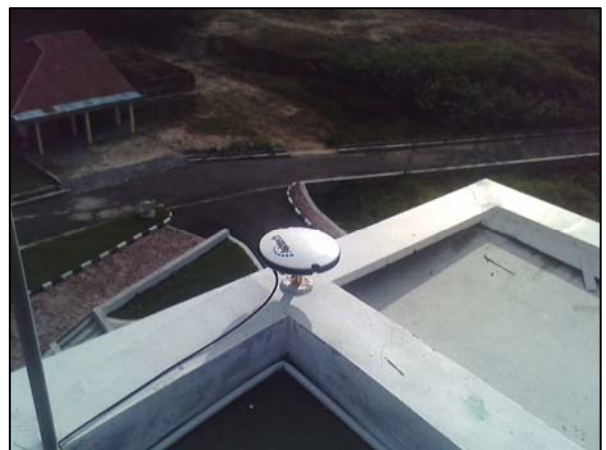
recomandation :

You can stay at the village or go back to padangpanjang, but be sure earlier in the morning have to be back on the site...

BKTG

CODE : BKTG
NAME : Bukittinggi
LOCATION : M. hatta library, bukittinggi
Lat : 00° 17' 04.1" S
Lon : 100° 22' 02.5" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

This site is new and together with maninjau 1,2,3, also BASO, this site represent the transect of bukittinggi, big buildings of public library situated at kompleks pemda bukittinggi.

The point is a marker on top of the roof this big library. As you can see in the picture...

The obstruction and the sky visibility is perfect, and the location in function of the distance to the fault is presumably very near, and for that reason this site is also one of the candidats that might be a promissing cGPS site... for bukittinggi..

Contact :

Pak Zulkifli, 081266065754

Pak Faisal, 081374750150

CBDK

CODE : CBDK
NAME : Cubadak
LOCATION : Cubadak village, Batusangkar
Lat : 00° 28' 3.08" S
Lon : 100° 32' 14.87" E
Measuring Apparatus : ENS marker (check with the logsheet)



Additional information :

One of the site recently build with ens marker on top of the rocks, easily accesible.
Only 2 meters from the village road, this road is in asphalt, and next 20 before the points you have a house.

BASO

CODE : BASO
NAME : BASO
LOCATION : SMP1 Baso, kabupaten agam. Bukittinggi
Lat : 00° 16' 59.9" S
Lon : 100° 28' 40.9" E
Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

Implanted ens marker in the front of school yard, nicely guard because there is a person who live in the school, you can make fences, to protect from the students disturbances.
You can leave the receiver the guardian of the school is available to keep and watch the receiver, because he lives nearby.

SLPY

CODE : SLPY
NAME : Solok Payo
LOCATION : desa Solok Payo, Kota Solok
Lat : 00° 47' 06.3" S
Lon : 100° 36' 35.8" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

Solok payo, we called it to the name of the nearest village, actually this site is located in the field, no electricity but there is a small hut where we can put the receiver safely inside, the owner who works for the field not coming everyday but he live in the village not so far for the points, it is not difficult to ask his permission to put and maybe to stay at night in this sites.

recomandation :

there is a small hut below the points, try to contact local people to get permission to put the receiver inside, with 30 metres antenna cable the equipment is safe inside the hut.

KTSN

CODE : KTSN
NAME : Kotasani
LOCATION : Desa Ubun ubun, Kecamatan Kotasani, Solok.
Lat : 00° 45' 35.2" S
Lon : 100° 35' 0.7" E

Measuring Apparatus : ENS Marker (check with the logsheet)



Additional information :

A stone that came out in the ancient lake that doesn't even exist in the map, This small lake called danau tua, a sort of caldera origin lake.

No electricity and for the protection you have to be careful in this site? We've experience a loss of one car battery in this site. Luckily the receiver is still in there the next morning; surveillance from local people is available but still no guaranties the loss of materials...

recomandation :

Watch carefully the receiver and especially the batteries. If necessary leave one person to guard the receiver.

BAKO and AMERICAN SITES.

K117

CODE : K117
NAME : K117
LOCATION : SDN 09 Kecamatan 2X11 Kayutanam
Lat : 00° 30' 32.45" S
Lon : 100° 20' 17.79" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This is a geodetic pillar belongs to national agency for survey and mapping (BAKOSURTANAL) situated inside the school yard, still in a good condition and already remeasure for the purpose in monitoring the mouvement of singkarak segments (bako-american sites).

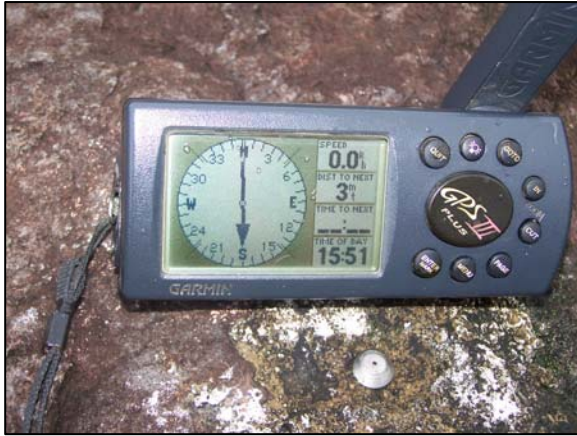
Recomandation :

The sites is perfectly safe, if you have to leave the receiver, ask to the guardian of the school to watch the receiver.

K108

CODE : K108
NAME : K108
LOCATION : Desa Kandang Empat. Jalan Lintas, lembah anai. Padang panjang.
Lat : 00° 29' 37.93" S
Lon : 100° 20' 18.17" E

Measuring Apparatus : (check with the logsheet)



Additional information :

This site is implanted in a rock, represented by a pin marker still in good condition, to measure it we have to use a tripod and due to the size of the rock, one leg of the tripod had to be placed in the rock it self, have to be carefull while centring, make sure all the tripod is steady and firm. Its also one of the Bako-american sites.

recomandation :

At night this site is perfectly safe, there is a small house near the road, not to far from the site, you can ask help for watching and guard the receiver. Give him some money at the morning.

CODE : K339
NAME : TTG 339
LOCATION : Sukarami, jalan lintas Solok Padang
Lat : 00° 56' 36.5" S
Lon : 100° 37' 19.6" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This site was a pillar for height measurement Bakosurtanal and used as well for the purpose of geodynamics (genrich et al). located at the office of BPTP (Balai Pengkajian Teknologi Pertanian) Solok, Jln Lintas Padang-Solok Km 40 Sukarami.

Well protected, even though it is just a couples of meters for the route principal that connect solok and padang.

CODE : K203
NAME : K203
LOCATION : SMP3 Gunung Talang, Solok
Lat : 00° 55' 35.58" S
Lon : 100° 38' 04.28" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This site was a concrete, implanted in the middle of the school yards, and it leveled with the ground, on top of it, there is a little pin marker representing the point. We have to use tripod to measure this site, the obstruction for GPS measurement is perfect, and for the safety reason this site is also well protected, first since it is in the school yards (SMP3 Gunung Talang) secondly you can ask person who live in the school to watch the receiver

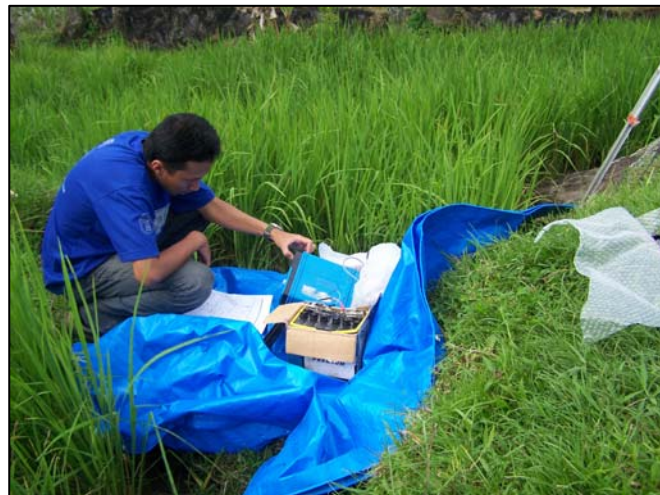
recomandation :

Make a fence surrounding the equipments because during the day school, you cannot guarantee if the student not going to touch or make something to the equipments.

K208

CODE : K208
NAME : K208
LOCATION : Cupak, Kecamatan Gunung Talang.
Lat : 00° 53' 09.38" S
Lon : 100° 38' 36.83" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This site is just like K108, manifested in the rocks, in the middle of the rice field, and for the points there is a little pin marker or more likely the needles, that implanted on top of the rock. Situated at the cupak village. Kecamatan Gunung Talang Kabupaten Solok, easy to access because the point is only less than 60 meters for the road, the same road that connect Padang and Solok.

K207

CODE : K207
NAME : K207
LOCATION : Desa Pianggu, SD Negeri 10. Solok.
Lat : 00° 46' 23.8" S
Lon : 100° 43' 43.34" E

Measuring Apparatus : (check with the logsheet)



Additional information :

It is a pillar GPS constructed by BPN (National agency for land cadastre and registration). The pillar is in good condition and perfectly stable for the purpose geodynamics, except on inconvenient that there is cerise three just 2 meters next to the pillars.

Again like others pillars it is situated in the school yards (SD 10 Pianggu, Kecamatan IX Koto Sungai Lasi, Solok). This school is easy to access, and only 20 meters beside the route principal of Solok, Jalur lintas sumatra.

K209

CODE : K209
NAME : K209
LOCATION : Solok laweh, Jalan raya lintas Sumatra, Kab Solok, KM 19
Lat : 00° 47' 13.25" S
Lon : 100° 40' 25.40" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

This site is a pillar of the irrigation agency PU, number of the pillar indicated is BM01. we use K209 presuming that the coordinate given by the article genrich et al, is exactly in the right pillar, since we don't any others pilars like BAKO BPN, etc.,

The pillar is quite stable, although not to big, and it's only 2 meters from the big road, and as you can see in the documentation the pillar is located just next to the brigde, and one big coconut tree.. although only one we presumed that it might not be a big obstacle for the signal...

CODE : K333
NAME : K333
LOCATION : Desa Gugu Sarai, Jalan Lintas Solok
Lat : 00° 45' 46.45" S
Lon : 100° 41' 51.62" E

Measuring Apparatus : Tripod (check with the logsheet)



Additional information :

Jln Lintas Sumatera Gugu sarai, Kecamatan sembilan koto sungai Lasih, Kabupaten solok, this is also one of the site of bako genrich et al 98.

The points is a little marker installed in a beton structure, this structure actually is a brigde as you can see in the picture, right in the principal route between solok and sawahlunto.

recomandation :

You have a house not so far for the points but, since it situated just 1,5 m from the road, then highly surveillance is needed in this point.

TOBO

CODE : TOBO
NAME : TOBO
LOCATION : Samsat Office, City of Pariaman
Lat :
Lon :

Measuring Apparatus : (check with the logsheet)



Additional information :

This is the site of triangulation point of BAKO, good and big concrete pillars on top of the hills in the city of Pariaman.

Contact :

Directly to the Samsat office, and ask for permission to install the receiver.

recomandation :

Impossible using the tripod because it is too high, prepare for the plate triangulare to make a measurement in this site.