

**ADMINISTRACION Y CONFIGURACION DE
REAL TIME KINEMATICS Y VIRTUAL
REFERENCE STATION-VRS EN EL PERÚ
EMPLEANDO EL SOFTWARE DE TRIMBLE Y
DE BKG"**

EXPOSITOR: ING. RUDDY REZZA SULCA

ruddyrezza@rtksoluciones.com

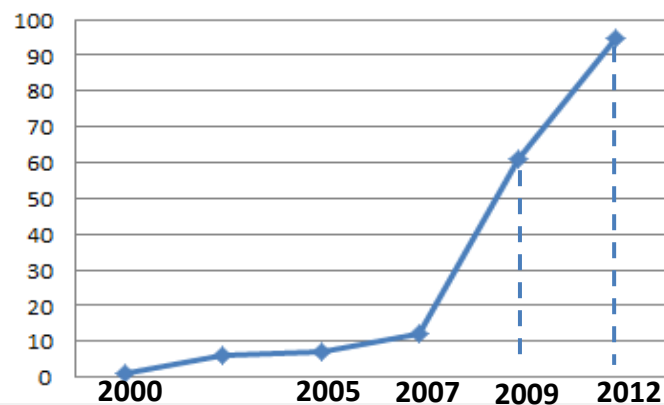
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 - 2. RTK MONOESTACION***
 - 3. RTK MULTIESTACION Y VRS***
 - 4. CONCLUSIONES.***
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ESTACIONES DE MONITOREO CONTINUO GNSS

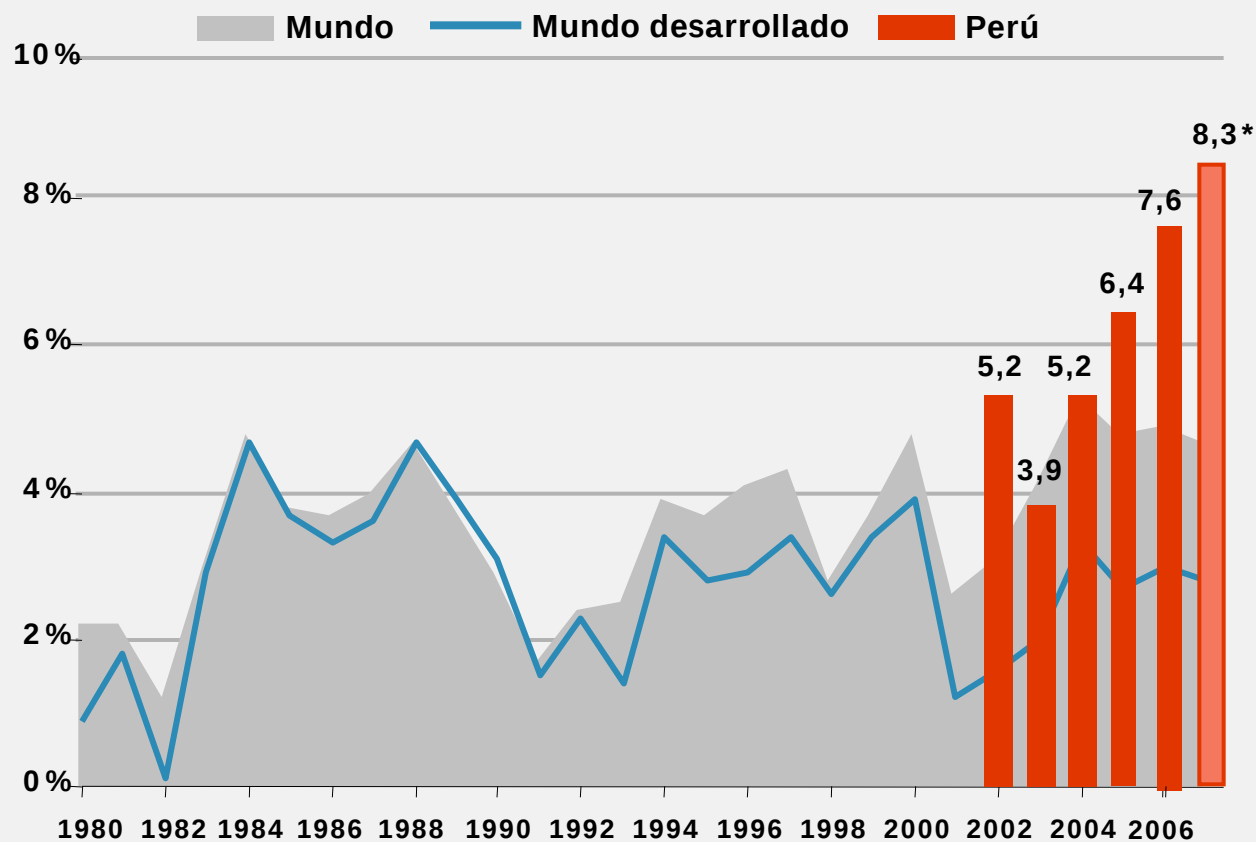


INSTITUCIONES	NET R5	NET R5	NET R8	NET R9	LEICA	OTRAS
IGN	1	5	40	1		
CORPAC		1		6		
SIRGAS					2	
SEDAPAL		1				
CALIDDA		1				
IGP		5		7		
CUSCO		1				
Otras Inst. ESTADO		4	3	2		
Otras Inst.PRIVADOS		3	2	1	4	4
	1	21	45	17	6	5
						95



Crecimiento económico sostenido

Tasa promedio de crecimiento anual superior al 7% para 2006-2010*

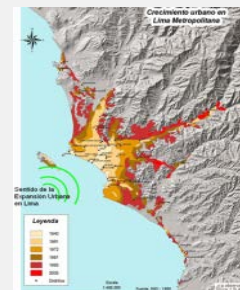




ELECTRICA



VIAL



URBANA

INFRAESTRUCTURAS NACIONALES





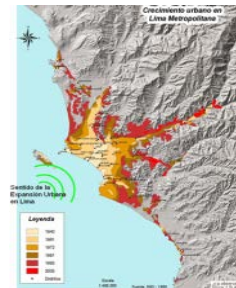
FERROVIARIA



ELECTRICA



VIAL



URBANA



TURISTICA



GASIFERA

INFRAESTRUCTURAS NACIONALES





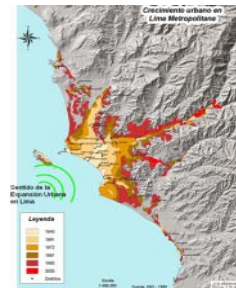
FERROVIARIA



ELECTRICA



VIAL



URBANA



TURISTICA

INFRAESTRUCTURAS NACIONALES



GASIFERA



SEGURIDAD



AGRICOLA



AEREA



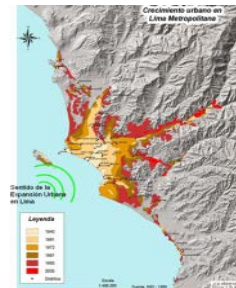
FERROVIARIA



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TURISTICA

INFRAESTRUCTURAS NACIONALES



GASIFERA



SEGURIDAD



AGRICOLA



AEREA

INFRAESTRUCTURA NACIONAL DE POSICIONAMIENTO GNSS



ENTONCES

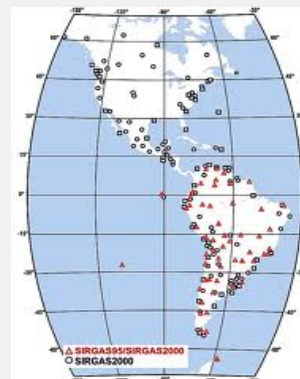
..QUE ES LA “ INFRAESTRUCTURA NACIONAL DE POSICIONAMIENTO ” ?

Conjunto de estaciones receptoras permanentes GNSS, adecuadamente distribuidas a nivel nacional, conectadas mediante redes TCP/IP e **integradas al Sistema de Referencia Geocéntrico para las Américas SIRGAS –CON**; con la finalidad de satisfacer los requerimientos de orden técnico por parte de los usuarios de las modernas técnicas de posicionamiento satelital y contribuye al **permanente mantenimiento Marco de Referencia Geodésico Nacional**. *Definición: Ruddy Rezza*

**RED ESTACIONES RECEPTORAS GNSS
INTEGRADAS A SIRGAS CON**

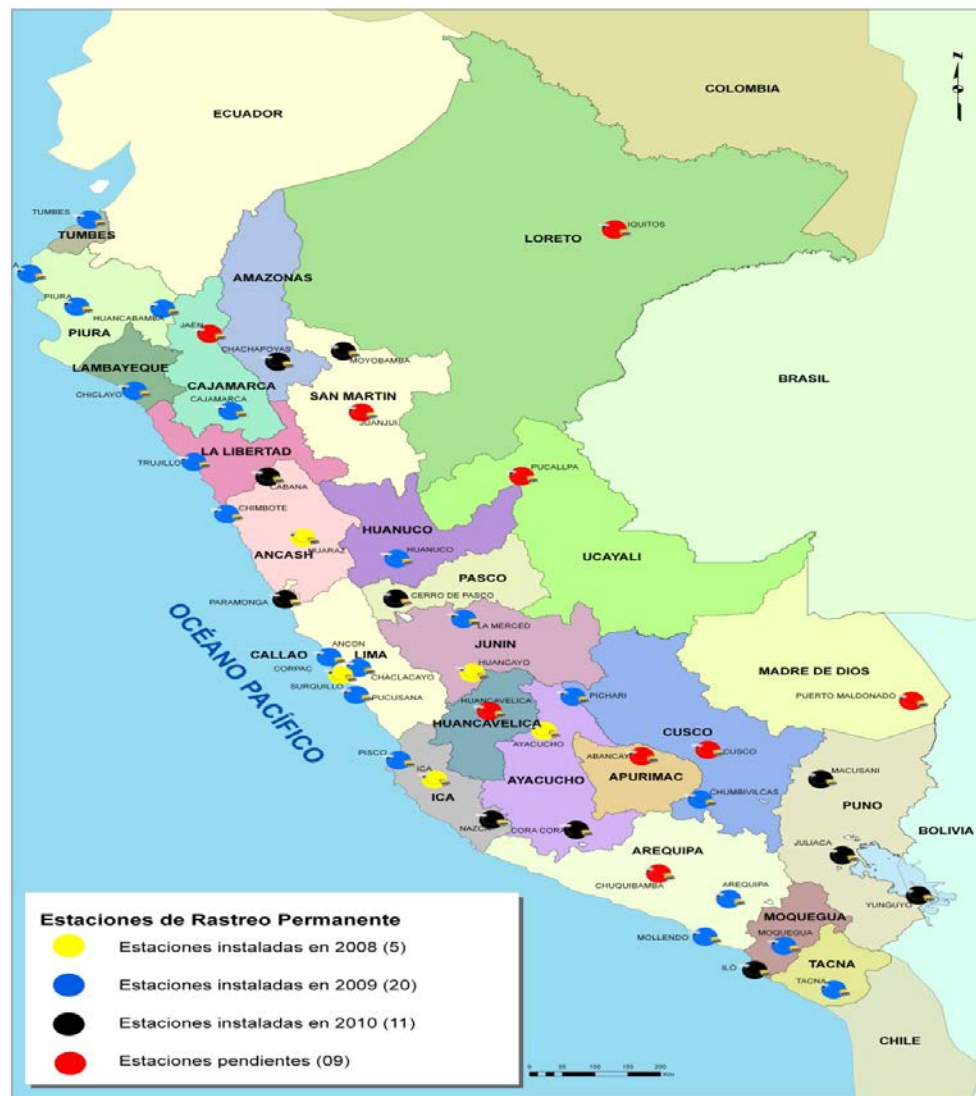


**CENTRO NACIONAL DE
PROCESAMIENTO SIRGAS**



2. REAL TIME KINEMATICS (RTK) A NIVEL NACIONAL

a. MONO ESTACION





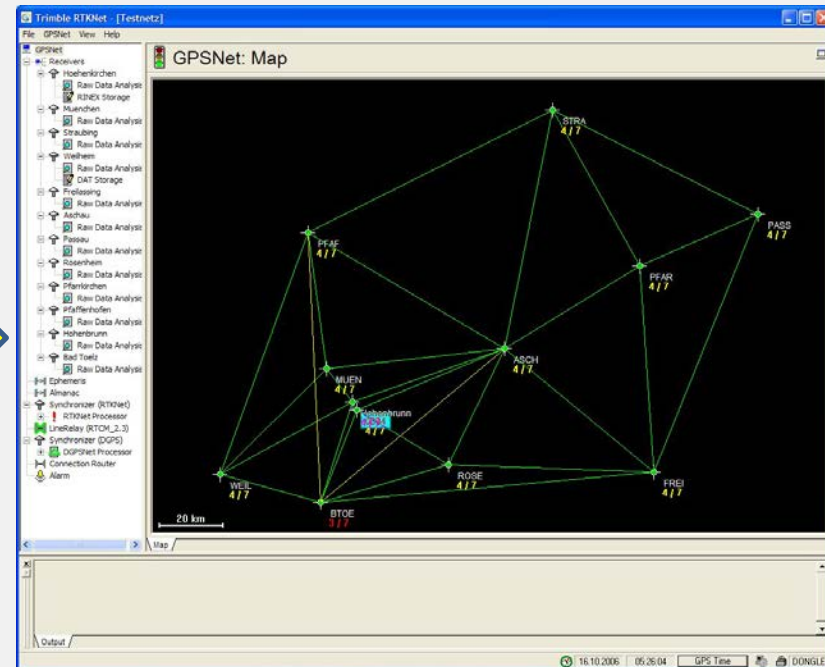
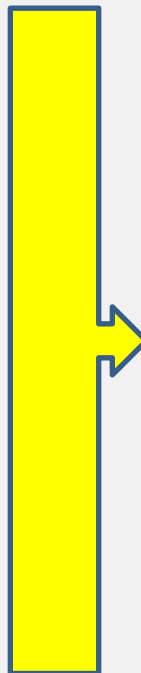
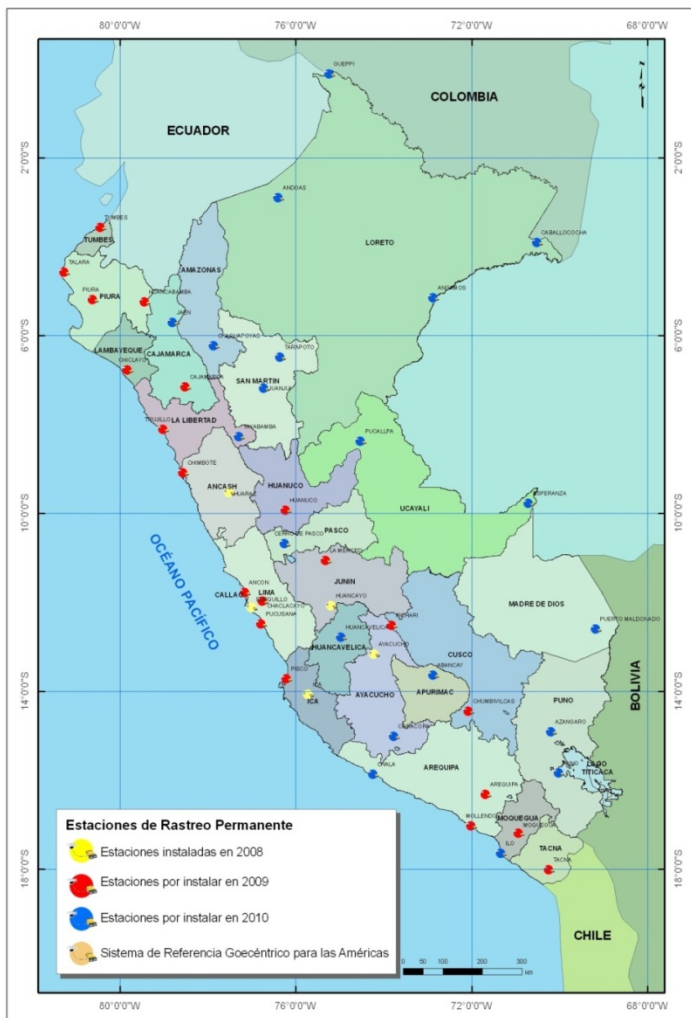
```

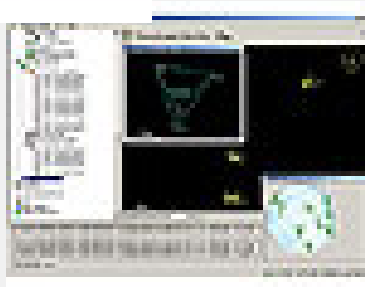
← → ↻ 190.235.201.15:5019
X Norton La licencia ha caducado. Identity Safe
SOURCETABLE 200 OK
Ntrip-Version: Ntrip/1.0
Server: NTRIP Caster 1.0
Date: 10/30/2012: 2: 2:43 GMT
Content-Type: gnss/sourcetable
Content-Length: 124
STR;Tarapoto;co01;CMR+;0(1),5(1);2;GPS+GLONASS;Single Base;per;-12.02;-77.11;0;0;Trimble NetR5;;B;N;9600;;
ENDSOURCETABLE

```

2. REAL TIME KINEMATICS (RTK) A NIVEL NACIONAL

b. MULTI ESTACION





CENTRO CONTROL

WWW.GPSNET.PE:2101

NATIONAL MARINE
ELECTRONICS
ASSOCIATION

NMEA

SocketServer8061 NMEA-Position

Geographical (WGS-84)

Lat: 47° 50' 17.35894" N

Lon: 11° 18' 35.75691" E

h: 338.43403 [m]

OK Cancel

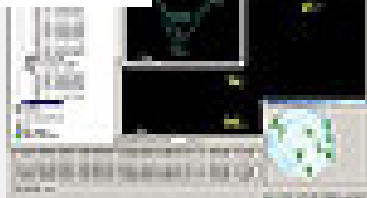
HUANCAYO

PUCUSANA

HUANCAVELICA

PISCO

ICA



CENTRO CONTROL

WWW.GPSNET.PE:2101

PUCUSANA

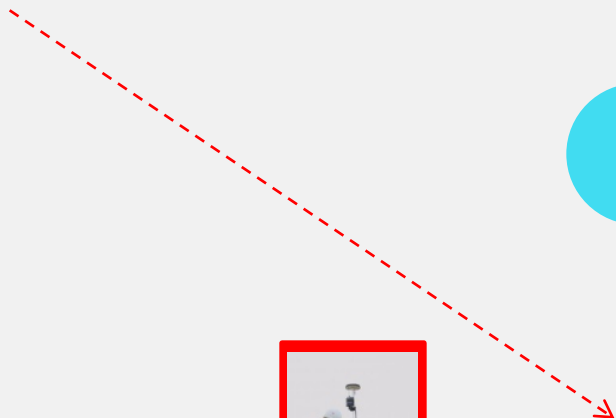
HUANCAYO



HUANCAVELICA

PISCO

ICA



3. VIRTUAL REFERENCE STATION (VRS) EN LIMA



Receivers

- ↑ Lima_Ancon
 - Raw Data Analysis
 - DAT Storage
- ↑ Lima_Pucusana
 - Raw Data Analysis
 - DAT Storage
- ↑ Callao_Corpac
 - Raw Data Analysis
 - DAT Storage
- ↑ Lima_Sedapal
 - Raw Data Analysis
 - DAT Storage
- ↑ Lima_Chacla
 - Raw Data Analysis
 - DAT Storage
- ↑ Callao_SIRGAS
 - Raw Data Analysis
 - DAT Storage
- ↑ Callao_SAN LORENZO
 - Raw Data Analysis
 - DAT Storage

Almanac

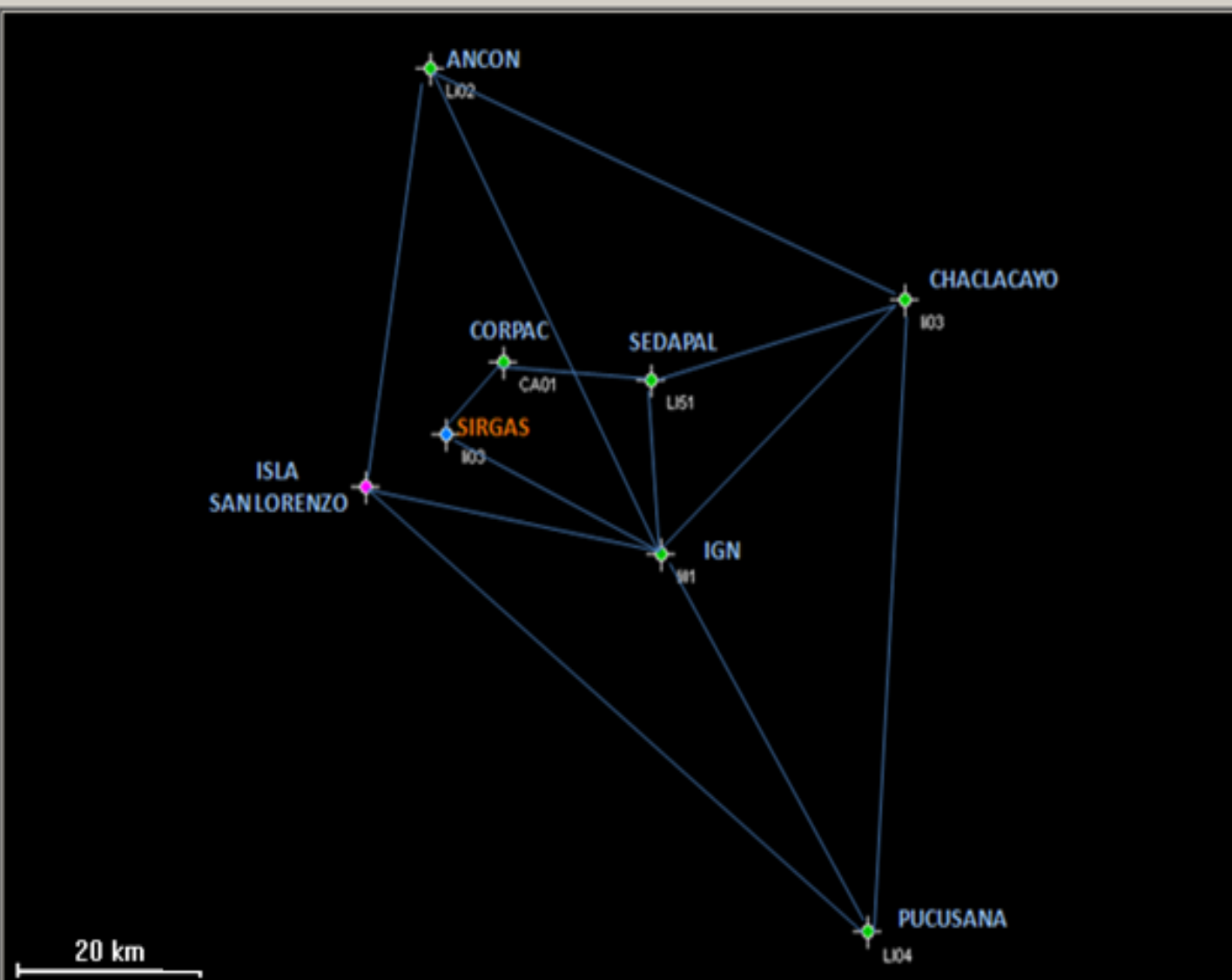
Synchronizer (LimaMetro)

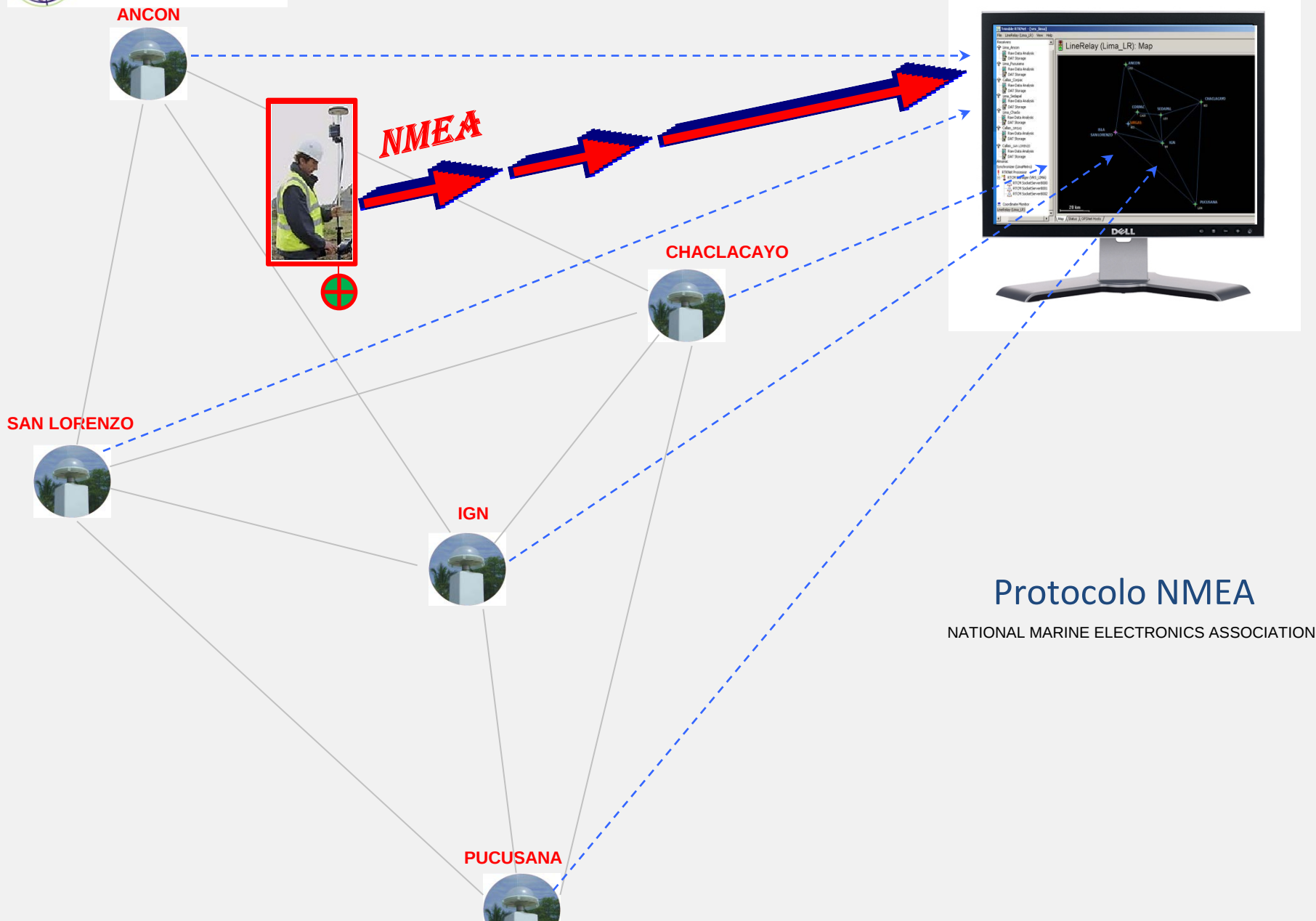
- RTKNet Processor
- RTCM Manager (VRS_LIMA)
 - RTCM SocketServer8000
 - RTCM SocketServer8001
 - RTCM SocketServer8002

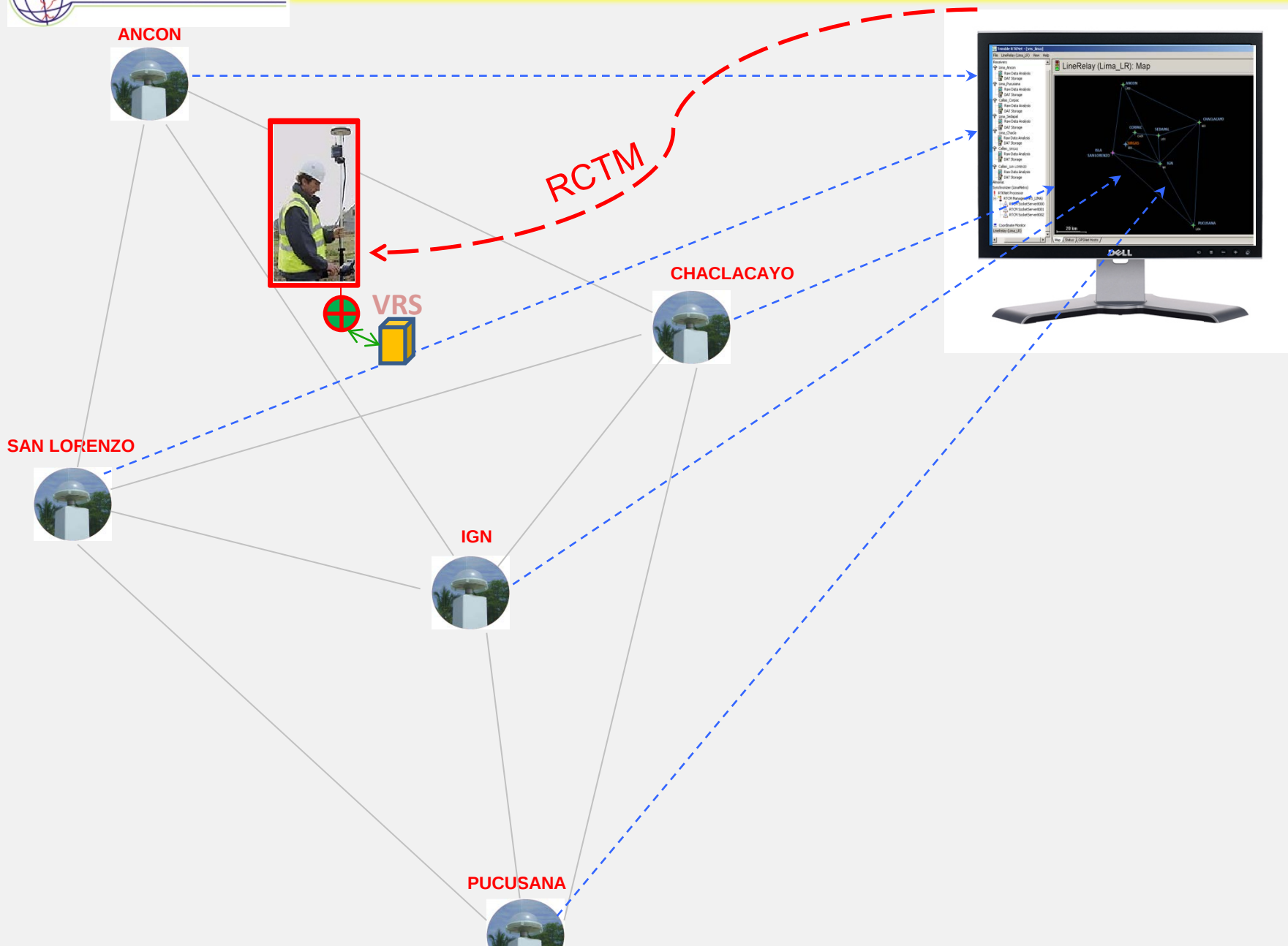
Coordinate Monitor

LineRelay (Lima_LR)

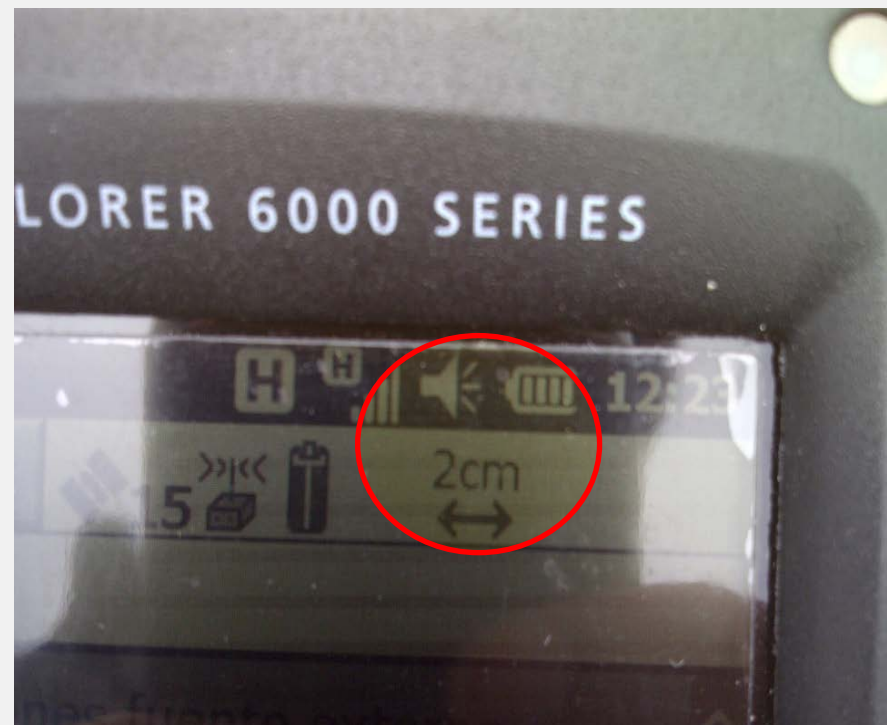
LineRelay (Lima_LR): Map

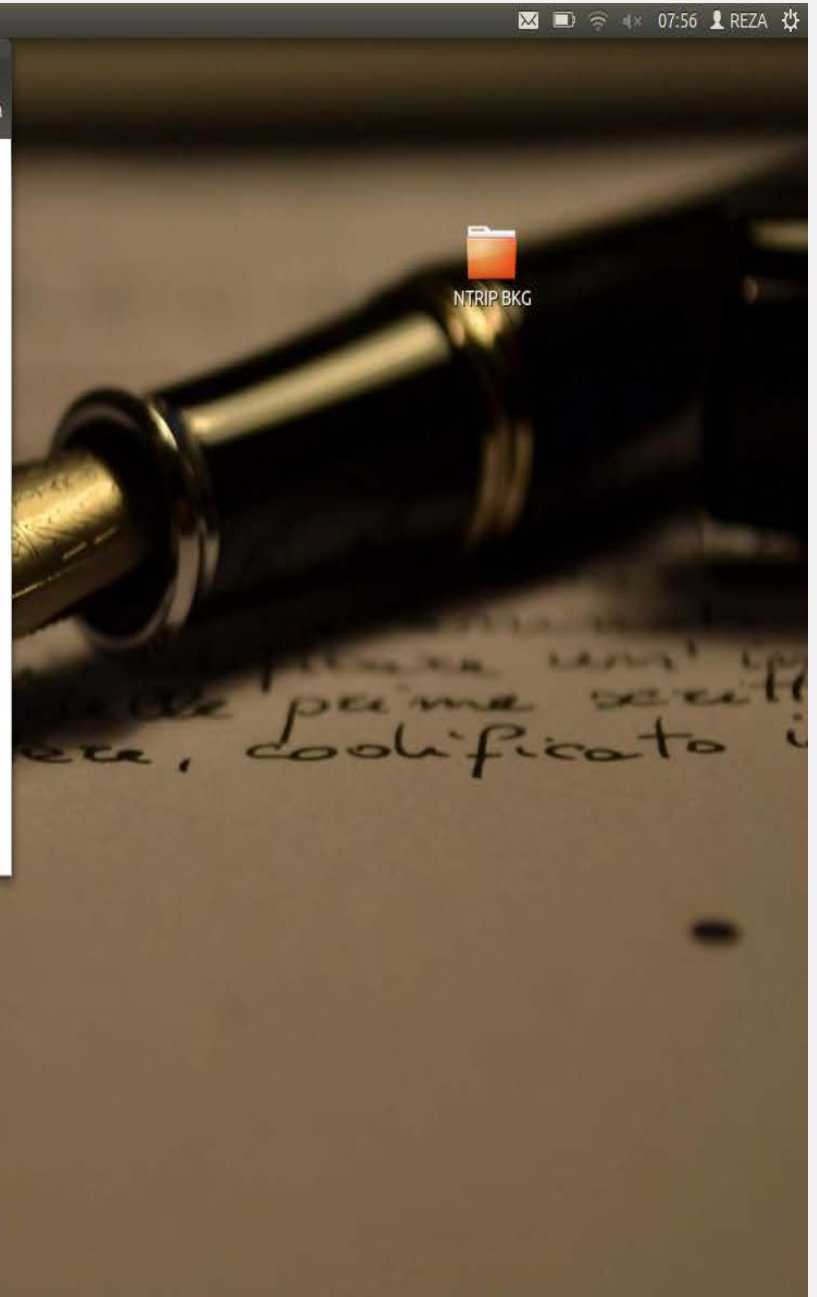
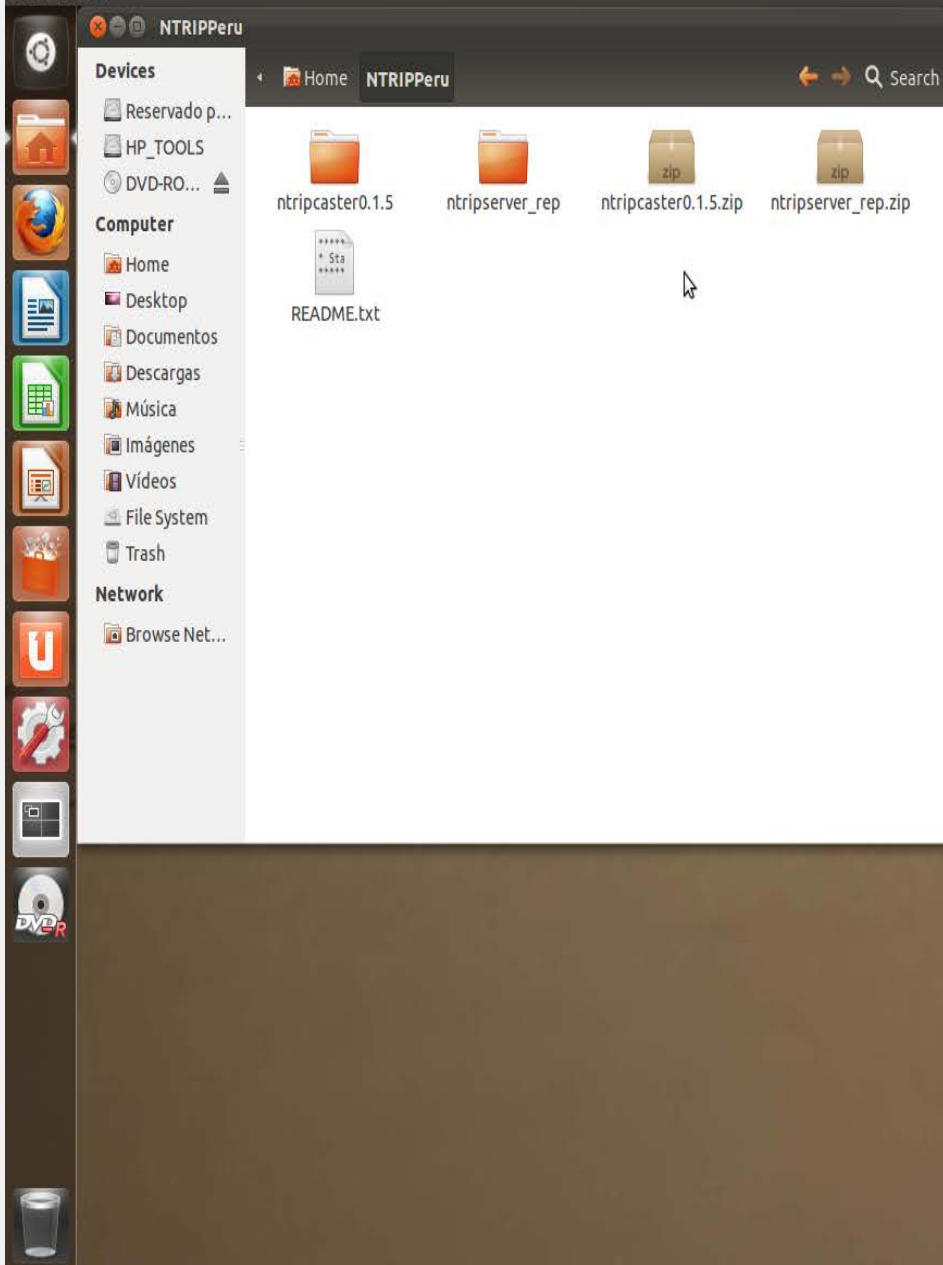


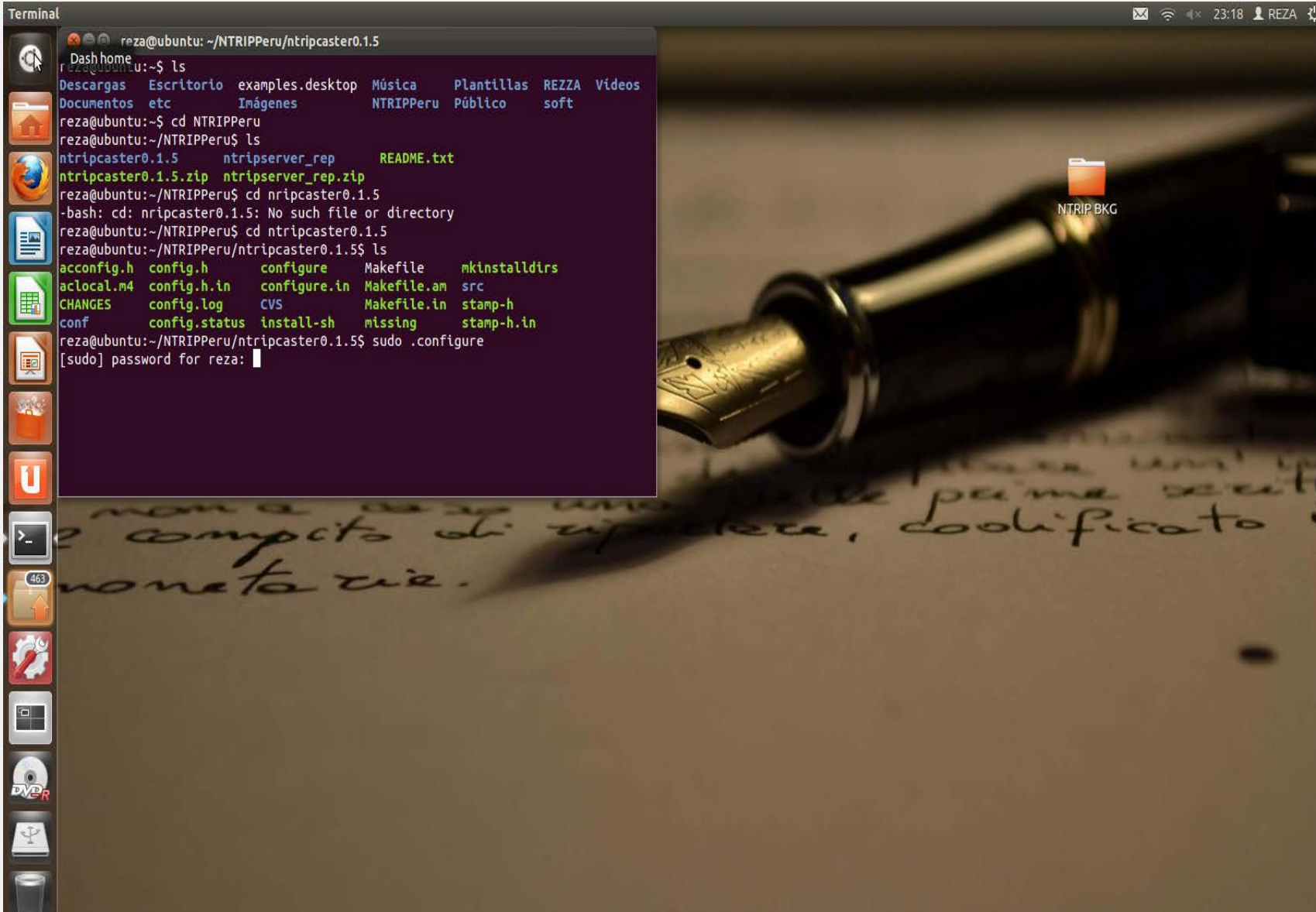




VIRTUAL REFERENCE STATION







reza@ubuntu: ~/NTRIPPeru/ntripcaster0.1.5

reza@ubuntu:~/NTRIPPeru/ntripcaster0.1.5\$ sudo .configure

[sudo] password for reza:

sudo: .configure: command not found

reza@ubuntu:~/NTRIPPeru/ntripcaster0.1.5\$ Paolo123

Paolo123: command not found

reza@ubuntu:~/NTRIPPeru/ntripcaster0.1.5\$ Paolo123

Paolo123: command not found

reza@ubuntu:~/NTRIPPeru/ntripcaster0.1.5\$ ls

acconfig.h config.h configure Makefile mkinstalldirs

aclocal.m4 config.h.in configure.in Makefile.am src

CHANGES config.log CVS Makefile.in stamp-h

conf config.status install-sh missing stamp-h.in

reza@ubuntu:~/NTRIPPeru/ntripcaster0.1.5\$ sudo ./configure

Building Ntripcaster-0.1.5...

checking for a BSD compatible install... /usr/bin/install -c

checking whether build environment is sane... yes

checking whether make sets \${MAKE}... yes

checking for working aclocal... missing

checking for working autoconf... missing

checking for working automake... missing

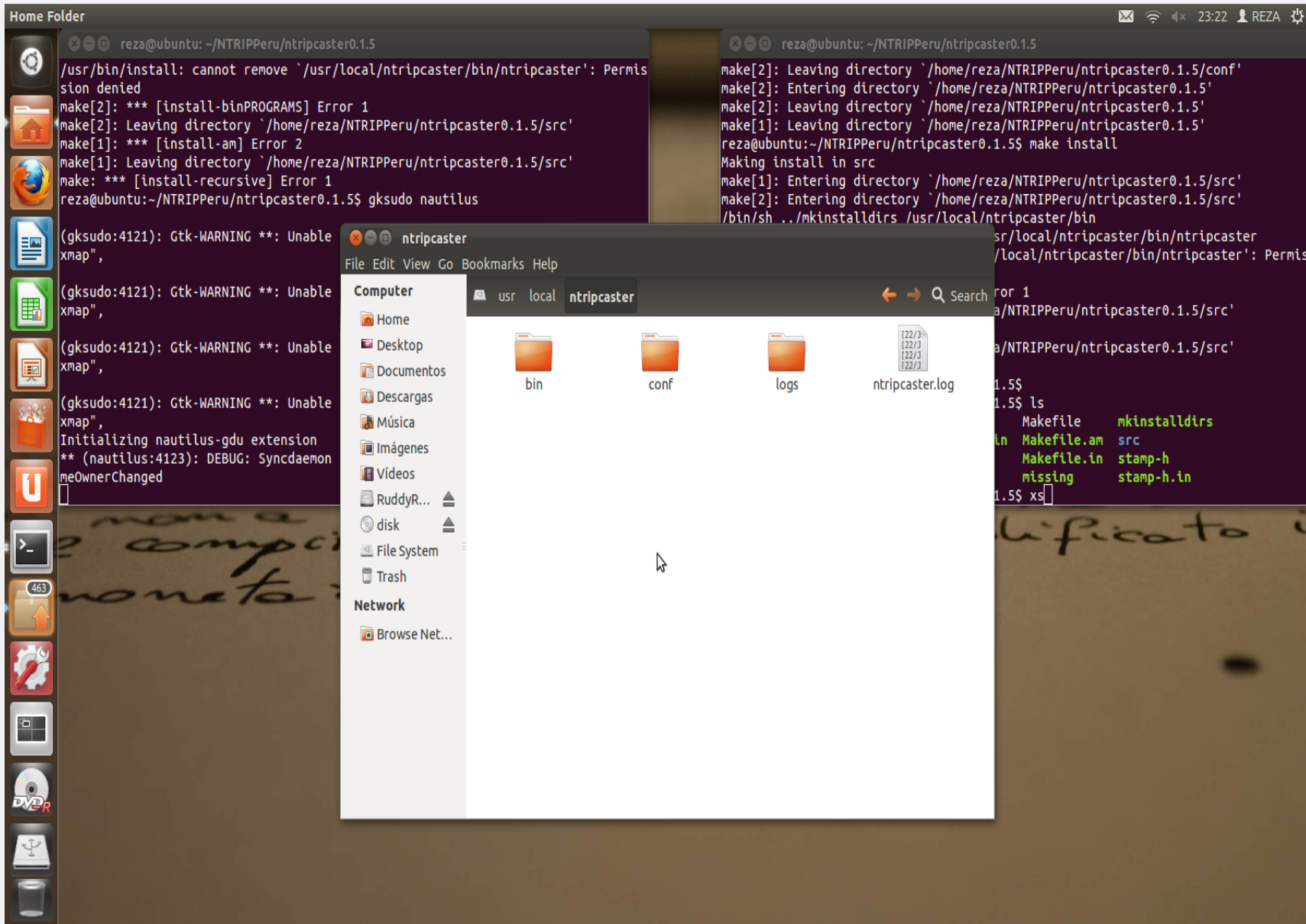
checking for working autoheader... missing

checking for working makeinfo... missing

checking whether to enable maintainer-specific portions of Makefiles... no

checking for ranlib... ranlib

NTRIP BKG



Red

File Edit View Search Tools Documents Help

*ntripcaster.conf

```
# The "encoder_password" is used from the sources to log in.

encoder_password gnss

##### Server IP/port configuration #####
# The server_name specifies the hostname of the server and must not be set to
# an IP-address. It is very important that server_name resolves to the IP-address
# the server is running at.
# For every port, the server should listen to, a new port line can be added.

server_name 201.239.204.79
#port 80
port 2101

##### Main Server Logfile #####
# logfile contains information about connections, warnings, errors etc.

logdir /usr/local/ntripcaster/logs
logfile ntripcaster.log

##### Access Control #####
# Here you specify which users have access to which mountpoints,
# one line per mount.
#
# Syntax: /<MOUNTPOINT>:<USER1>:<PASSWORD1>,<USER2>:<PASSWORD2>,...,<USERn>:<PASSWORDn>
#
# /<MOUNTPOINT>: name of the mountpoint. Must start with a slash.
# <USERi>: name of the user that has access to <MOUNTPOINT>.
# <PASSWORDi>: password of <USERi>.
#
# example:
#/mount0:user0:pass0,user1:pass1,user2:pass2
#/BUCU0:user1:password1,user2:password2
#/PAD00

/CA01:SIRGAS:sudamerica
/Tarapoto2:SIRGAS:sudamerica
/IOP2:ivan:ivan2004
```

Connection Information

Active Network Connections

1565FREIRE (default)

General

Interface: 802.11 WiFi (wlan0)
Hardware Address: 1C:65:9D:34:03:54
Driver: rtl8192se
Speed: 72 Mb/s
Security: WPA/WPA2

IPv4

IP Address: 201.239.204.79
Broadcast Address: 201.239.207.255
Subnet Mask: 255.255.252.0
Default Route: 201.239.204.1
Primary DNS: 200.74.121.11
Secondary DNS: 190.160.0.13
Ternary DNS: 200.83.1.4

IPv6

Close

Octave ▾ Tab Width: 8 ▾ Ln 30, Col 27 INS

*sourcetable.dat (/usr/local/ntripcaster/conf) - gedit

23:24 REZA

File Edit View Search Tools Documents Help

Open Save Undo

*ntripcaster.conf *sourcetable.dat

```
STR;CA01;CA01;RTCM 2.3;RTCM(1);2;GPS & GLONASS;REP;Single Base;per;-12.02;-77.11;0;0;Trimble NetR5;;B;N;9600>null antenna
```

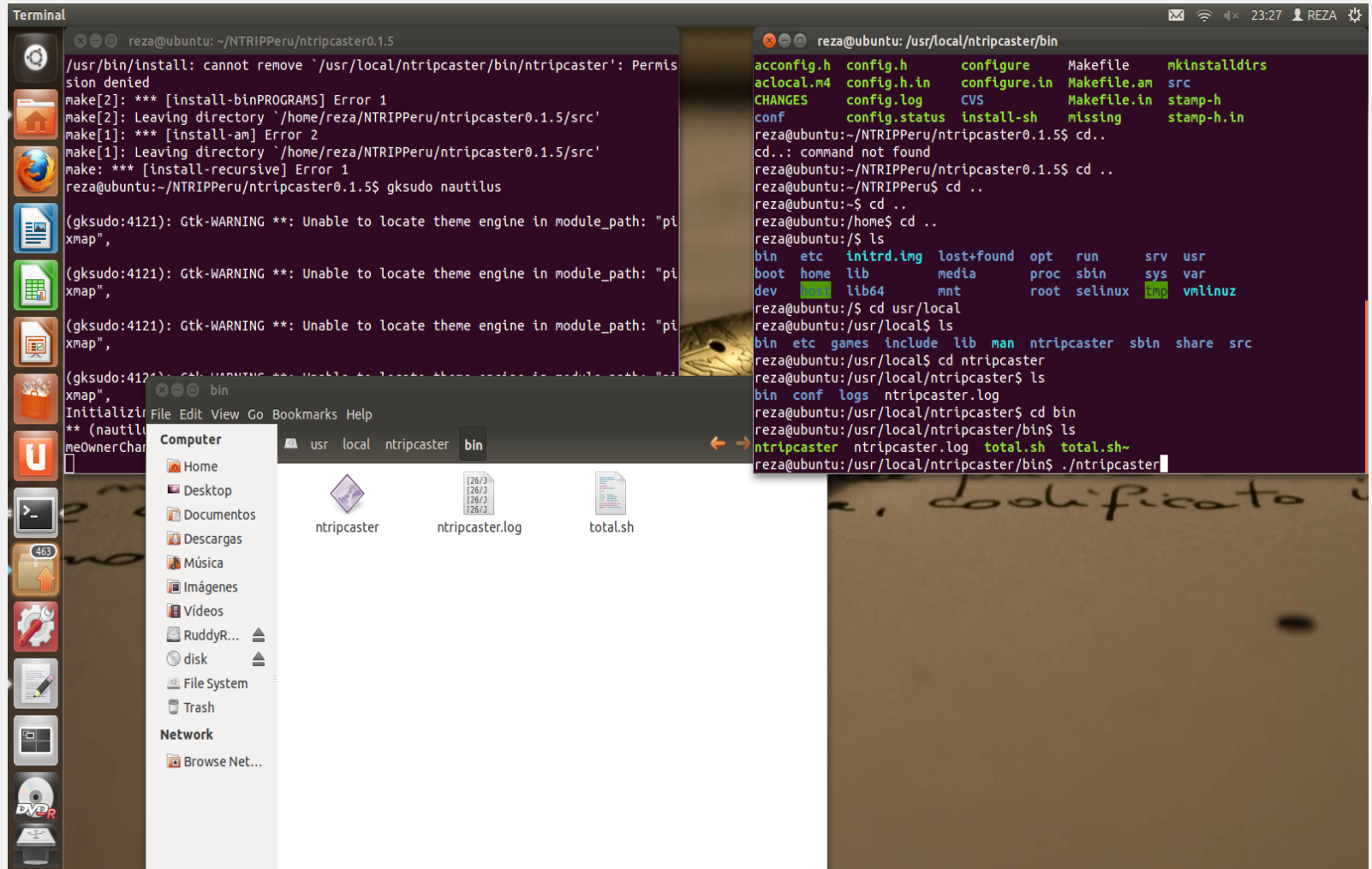
```
STR;Tarapoto2;Tarapoto2;RTCM 2.3;RTCM(1);2;GPS & GLONASS;REP;Single Base;pe;-6.51;-76.37;0;0;Trimble NetR9;;B;N;9600>null antenna
```

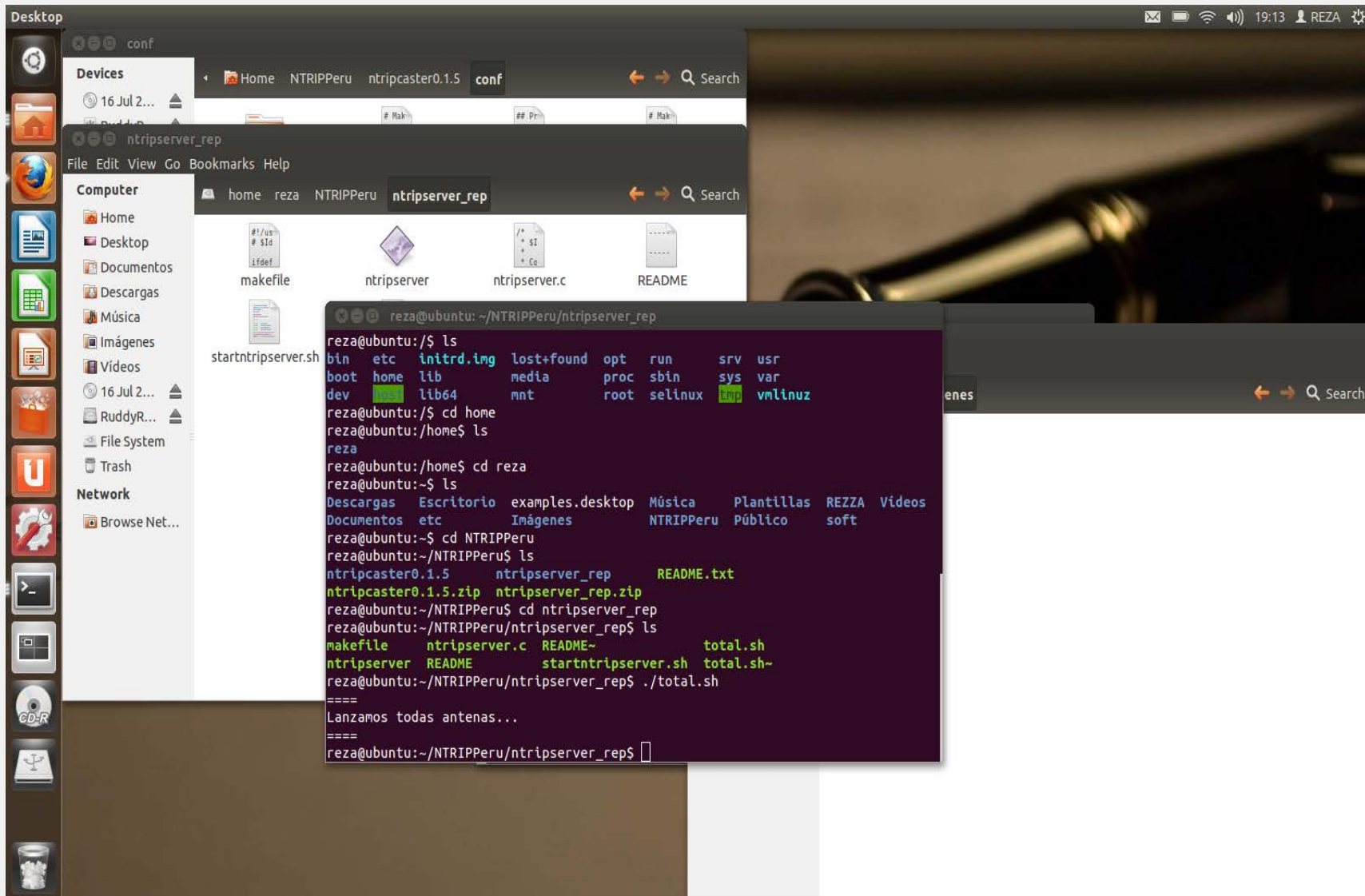
```
STR;IOP2;IOP2;RTCM 2.1;RTCM(1);2;GPS & GLONASS;REP;Single Base;EC;-0.20;-78.50;0;0;Trimble NetR5;;B;N;9600>null antenna
```

Plain Text Tab Width: 8

Ln 4, Col 1

INS





Mozilla Firefox

201.239.204.79:2101

http://201.239.204.79:2101/

SOURCETABLE 200 OK
Server: NTRIP NtripCaster 0.1.5/1.0
Content-Type: text/plain
Content-Length: 377

STR;CA01;CA01;RTCM 2.3;RTCM(1);2;GPS & GLONASS;REP;Single Base;per;-12.02;-77.11;0;0;Trimble NetRS;;B;N;9600>null antenna
STR;Tarapoto2;Tarapoto2;RTCM 2.3;RTCM(1);2;GPS & GLONASS;REP;Single Base;pe;-6.51;-76.37;0;0;Trimble NetR9;;B;N;9600>null antenna
STR;IOP2;IOP2;RTCM 2.1;RTCM(1);2;GPS & GLONASS;REP;Single Base;EC;-0.20;-78.50;0;0;Trimble NetRS;;B;N;9600>null antenna
ENDSOURCETABLE

CONCLUSIONES

INFORMACION GEODESICA

PARA LA PERSONA
CORRECTA



INFORMACION
CORRECTA

EN EL MOMENTO
CORRECTO

CONTINUIDAD

“La gente carece de muchas cosas: trabajo, techo, comida, salud, agua potable. Hoy, el no tener acceso a los servicios de informaciones básicas es una privación casi tan grave como las anteriores, y puede ciertamente reducir los chances de hallar remedios para ellas”.

(Kofi Anan, Secretario General de la ONU, Ginebra, news.BBC.co.uk, 14/10/1999).

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PROBLEMAS PRINCIPALES...

