

VRS Network in Chengdu, China

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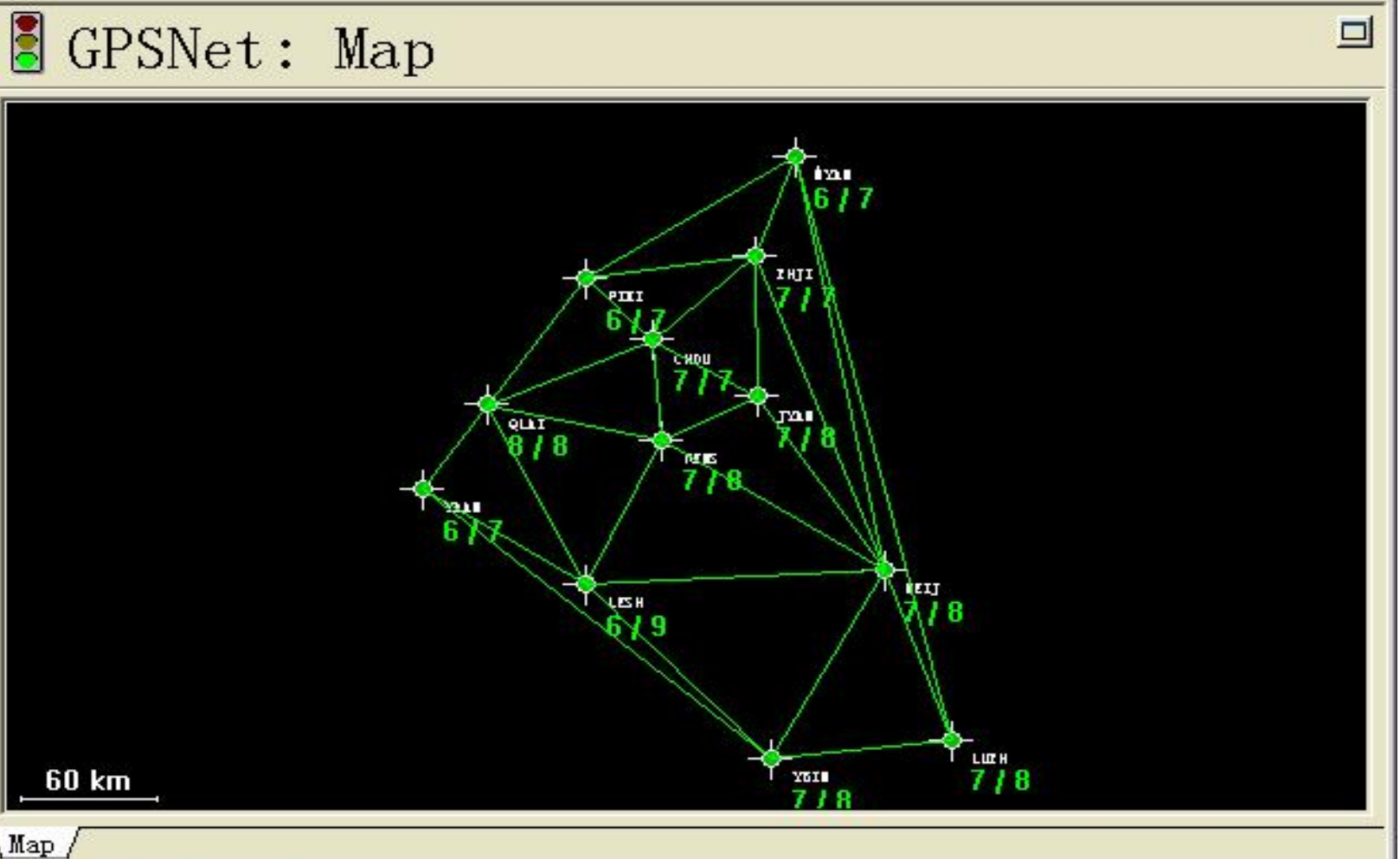
Introduction

- Built by Sichuan Province Seismic Bureau
- Started in May, 2003
- Started testing and trial operation in Sept, 2004
- Satisfied with its performance.

Network

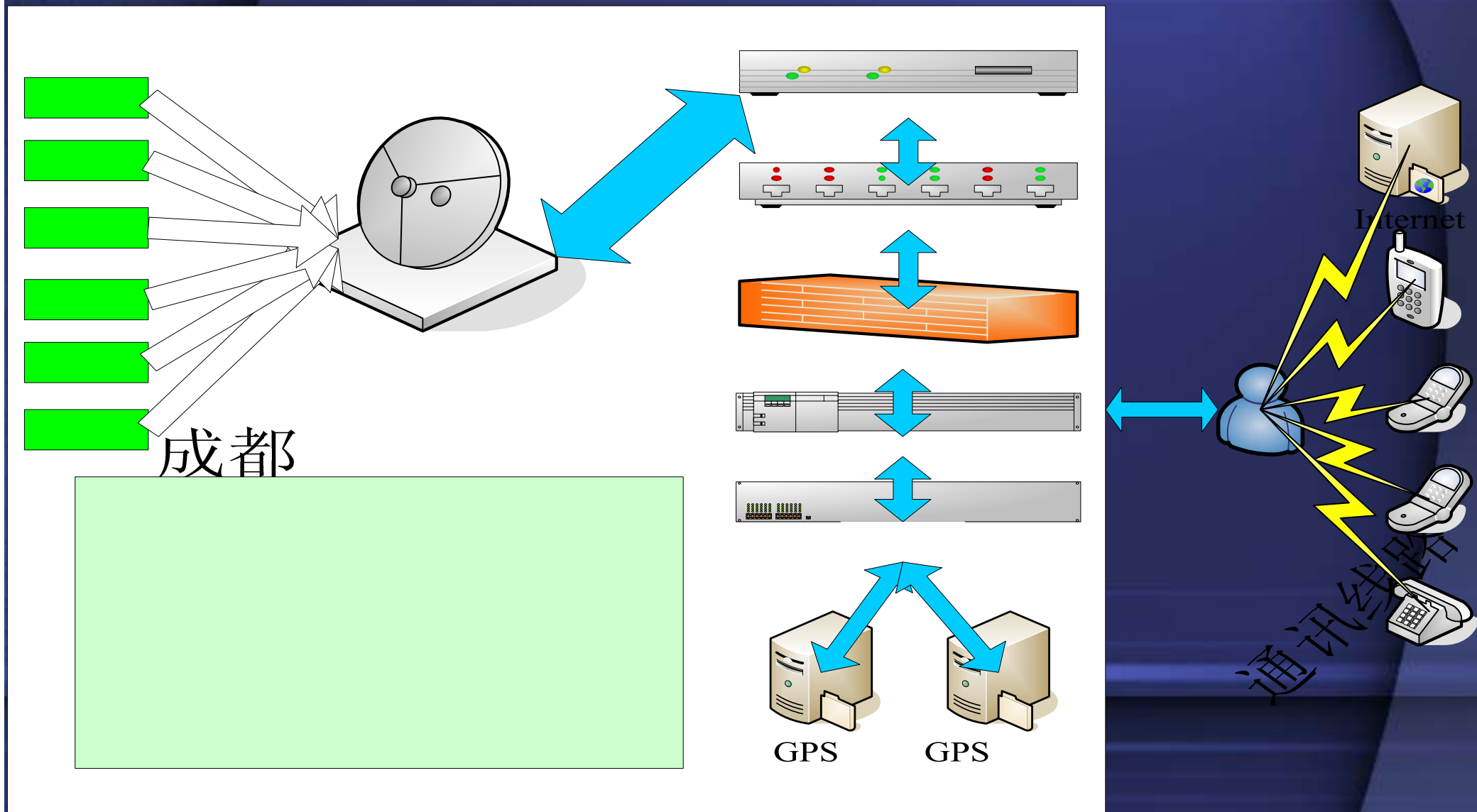
- VRS Phrase I (4 stations)
CHDU,PIXI,RENS,ZHJI
- Time: 2003.11-2004.12
- VRS Phrase II (2 stations added)
JYAN, QLAI
- VRS Phrase III (6 stations added)
YAAN,NEIJ,LUZH,LESH,MYAN,YBIN

- GPSNet
 - Receivers
 - CHDU
 - Raw Data Anal
 - RINEX Storage
 - RINEX Storage
 - DAT Storage
 - DAT Storage
 - PIXI
 - Raw Data Anal
 - RINEX Storage
 - RINEX Storage
 - DAT Storage
 - DAT Storage
 - RENS
 - Raw Data Anal
 - RINEX Storage
 - RINEX Storage
 - DAT Storage
 - DAT Storage
 - JYAN
 - Raw Data Anal
 - RINEX Storage
 - RINEX Storage
 - DAT Storage



2006-4-26 14:53:21 Receiver ZHJI: Record 0x00 ignored
2006-4-26 14:53:32 RTCM VRSModem: Device name for device 0x00000001 is not zero terminated.
2006-4-26 14:53:32 RTCM VRSModem: Could not find TAPI device "Qxcomm Color III 56K V.92 Modem".

Network Diagram



中江

Network Characteristics

- Multi-communications for rovers
- Very long baseline

Multi-communication ways for Rover

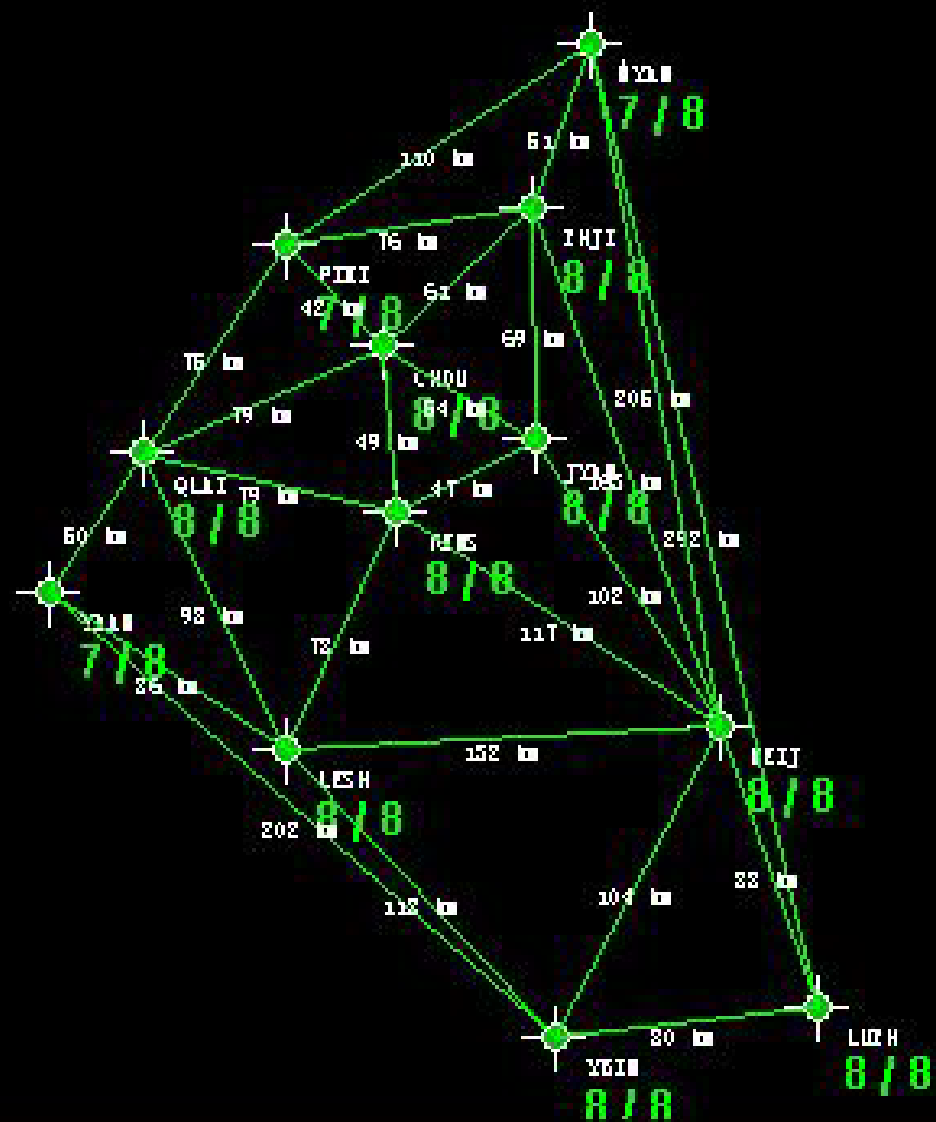
- GSM、GPRS、CDMA
- The 1st network supports CDMA in China
- Download post-process data via Internet

Very Long Baseline

- The longest baseline is 206, the 2nd longest is 202.
- Although the baseline is long, VRS software can still provide reliable accuracy around 2-5cm.
- Although it has such a long baseline, the VRS resolution time is within 5 minutes



GPSNet: Map



60 km

Other characteristics

- Oracle 9i database
- Billing system
- Geoid modeling

1.Oracle 9i database

- Use Oracle database to create database for VRS.

2. Billing system

用户数据

文件

用户: test 详细记录

UserID	ServiceID	服务时间	开始时间	结束时间	总时间(分钟)	费用(元)
19	-1	0	2006-4-21	2006-4-21 1	713	1069.5
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-21	2006-4-21 1	(null)	(null)
19	-1	0	2006-4-23	2006-4-23 1	(null)	(null)
19	-1	0	2006-4-23	2006-4-23 1	(null)	(null)
19	26	18	2006-4-5	2006-4-5 21	(null)	(null)
19	27	79	2006-4-3	2006-4-3 21	(null)	(null)
19	27	465	2006-4-4	2006-4-4 8:	(null)	(null)
19	27	28	2006-4-4	2006-4-4 15	(null)	(null)
19	27	9	2006-4-4	2006-4-4 21	(null)	(null)
19	27	706	2006-4-5	2006-4-5 9:	(null)	(null)
19	27	8	2006-4-5	2006-4-5 9:	(null)	(null)
19	27	846	2006-4-5	2006-4-5 10	(null)	(null)
19	27	9	2006-4-5	2006-4-5 11	(null)	(null)
19	27	160	2006-4-5	2006-4-5 14	(null)	(null)
19	27	303	2006-4-5	2006-4-5 14	(null)	(null)
19	27	12	2006-4-5	2006-4-5 14	(null)	(null)
19	27	336	2006-4-5	2006-4-5 15	(null)	(null)
19	27	658	2006-4-5	2006-4-5 15	(null)	(null)
19	27	201	2006-4-5	2006-4-5 19	(null)	(null)
19	27	319	2006-4-5	2006-4-5 20	(null)	(null)
19	27	223	2006-4-5	2006-4-5 20	(null)	(null)
19	27	777	2006-4-6	2006-4-6 8:	(null)	(null)
19	27	498	2006-4-6	2006-4-6 13	(null)	(null)
19	27	22	2006-4-7	2006-4-7 20	(null)	(null)
19	27	104	2006-4-11	2006-4-11 7	(null)	(null)
19	27	225	2006-4-11	2006-4-11 7	(null)	(null)
19	27	481	2006-4-11	2006-4-11 8	(null)	(null)
19	27	620	2006-4-11	2006-4-11 9	(null)	(null)
19	27	852	2006-4-11	2006-4-11 1	(null)	(null)
19	27	344	2006-4-11	2006-4-11 1	(null)	(null)
19	27	1799	2006-4-11	2006-4-11 1	(null)	(null)
19	27	842	2006-4-11	2006-4-11 1	(null)	(null)
19	27	1741	2006-4-11	2006-4-11 1	(null)	(null)
19	27	75	2006-4-11	2006-4-11 1	(null)	(null)

查询

从 2006-4-1 到 2006-5-1

输入 UserID: test

读取

Xml类型

请选择查询的月份

请输入用户名

读取

计算总时间(分)

打印

收费标准(元/分钟)

1.5

确定

计算时间(秒)

开始

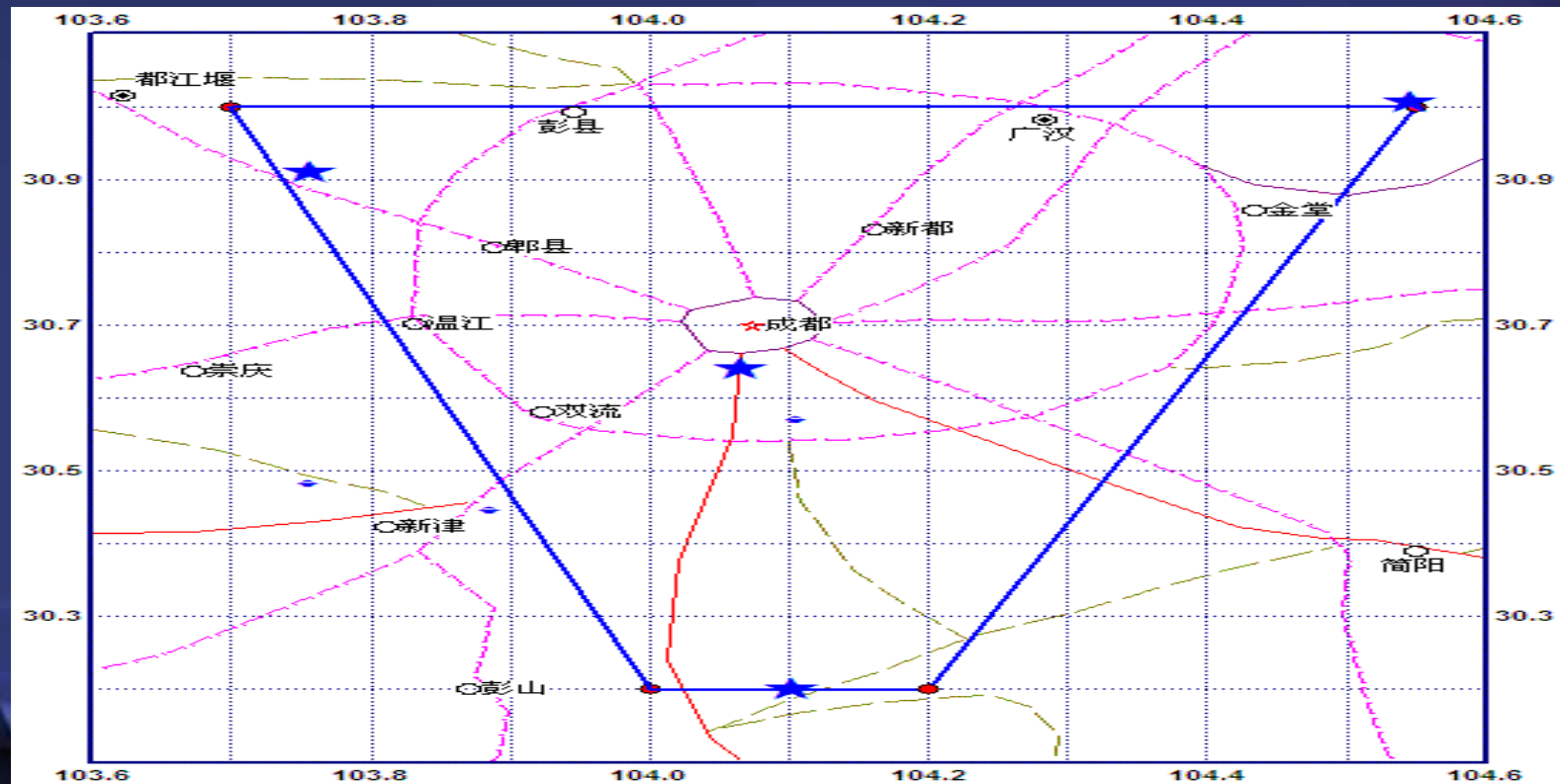
用户数据

16:03

Geoid

- We build in Geoid model into survey controller.

Chengdu Geoid Diagram



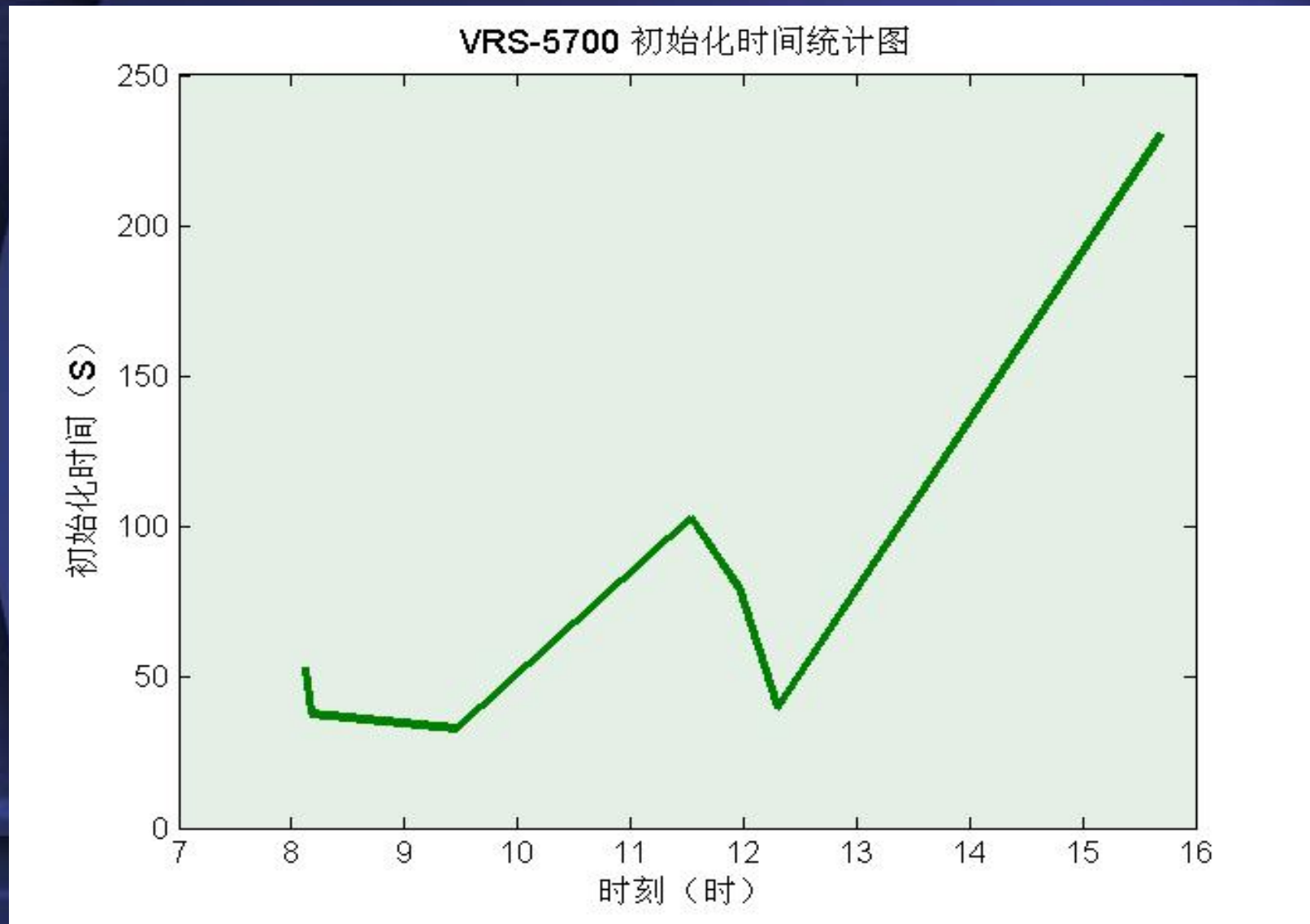
Accuracy

- With support of Southwest University, we did a lots accuracy testing to make sure the reliability of VRS accuracy.
- VRS network always provide 2.5cm horizontal accuracy and 4.5cm vertical accuracy
- Reliability is no problem

Initialization time test

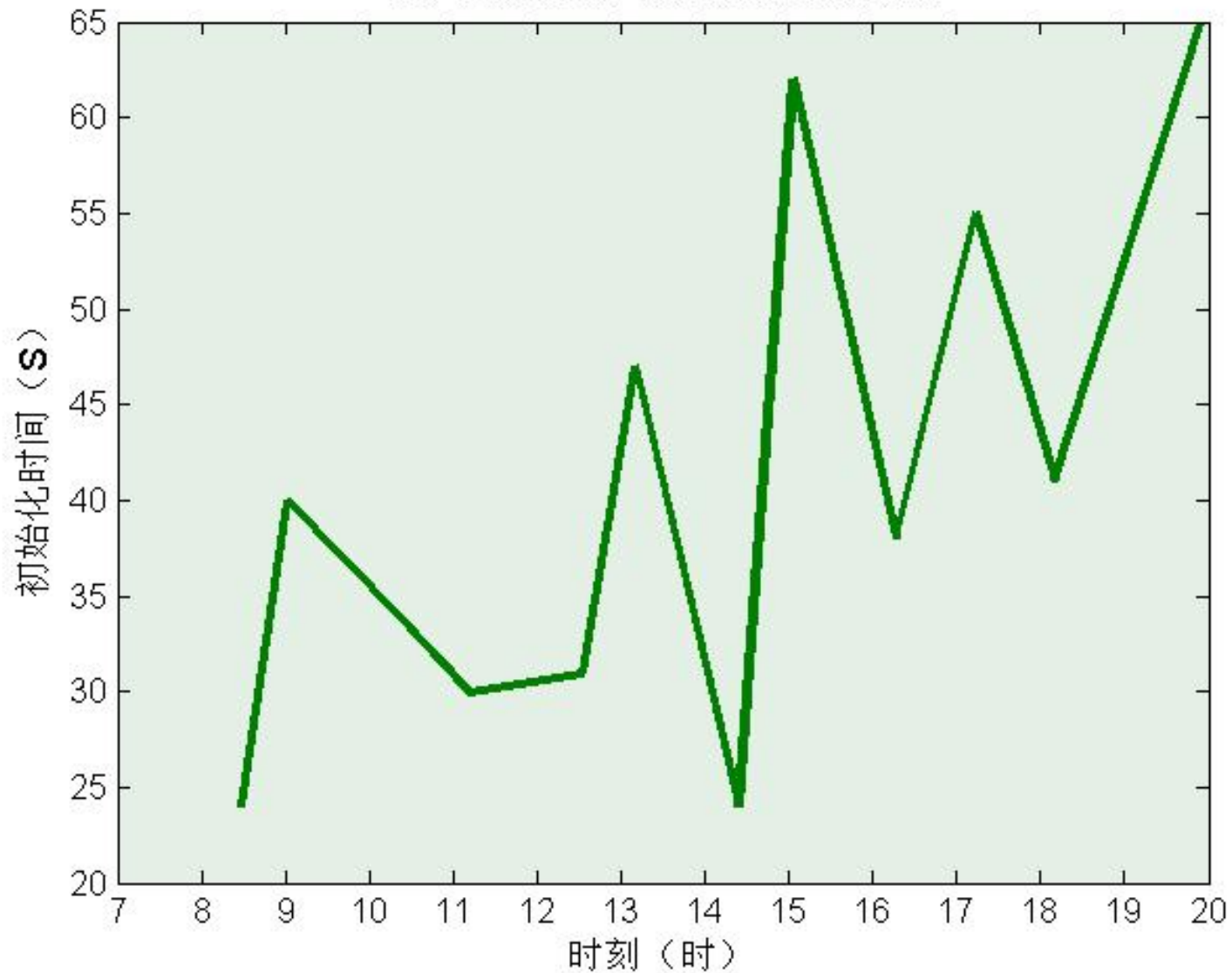
- Use Trimble 5700 rover

Initialization time



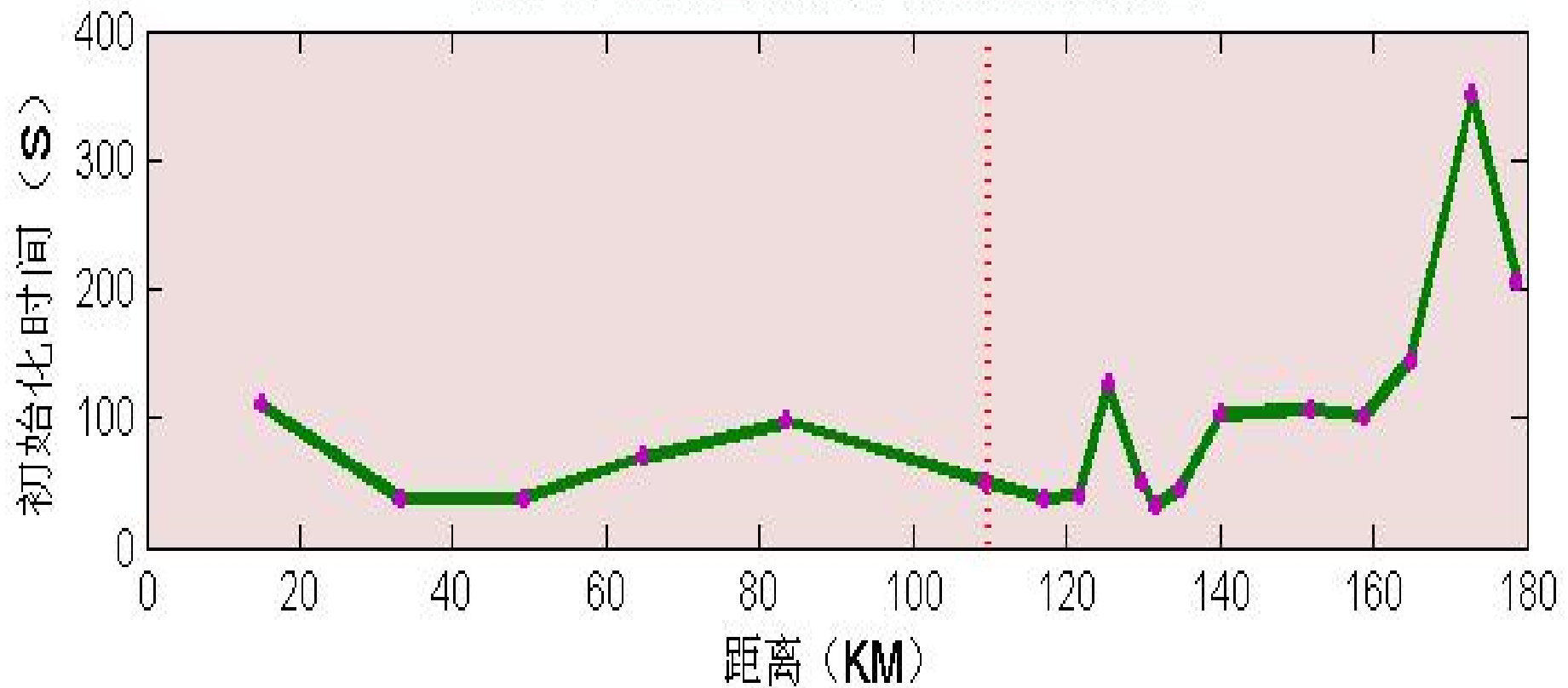
Initialization time in a known point for 12 hours continuous initialization

CD VRS-5700 初始化时间统计图



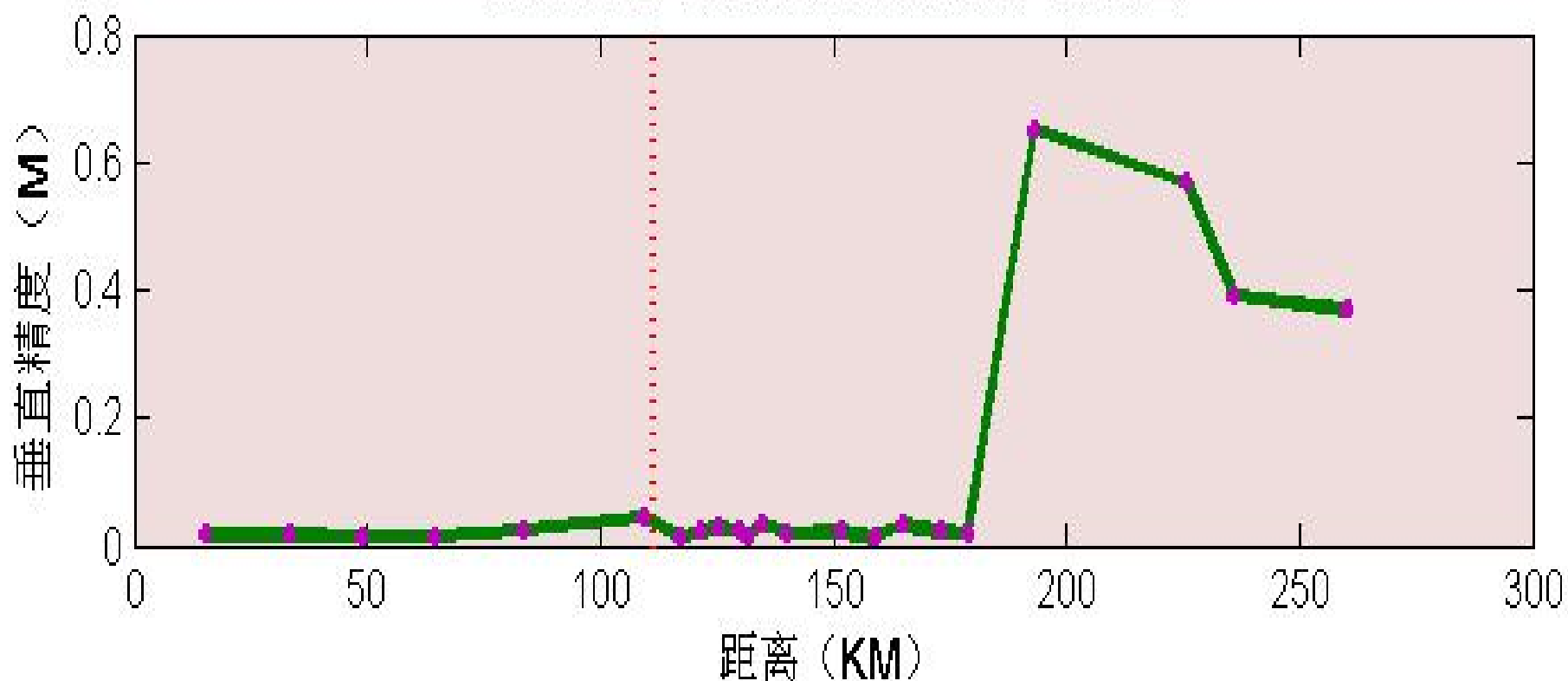
Initialization time outside of Network

VRS-5700 外延 初始化时间随距离变化图



Vertical Accuracy test outside of network

VRS-5700 外延 垂直距离随时间变化图



Horizontal Accuracy test outside of network

VRS-5700 外延 水平精度随距离变化图

