GNSS Training, Team No: 01

Team Members' Name	Affiliation	E-mail
Md. Rownak Islam	Center for Resource Development Studies	rownakbrac@gmail.com
Ping Jack Soh	University Malaysia Perlis	pjsoh@unimap.edu.my
Kritchyana Intarat	Thammasat University	intaratt@gmail.com
Aman Arora	Jamia Millia Islamia	aman158911@st.jmi.ac.in
Mr. Ali Cherif AbdelKarim	Algeria Space Agency	krimotopo@live.fr

Introduction

- In this GNSS training program, the introduction and scope about GNSS is given to the participants and afterwards the esteemed experts have taught us about the collection and processing of the data.
- Then, the practical work was assigned to the participants for collecting data from various kind of receivers and post processing of the same to make it more precise and accurate.
- Our team has collected Single Point Positioning (SPP) and Real-Time Kinematic (RTK) data from M8T receiver.

Methodology of collection of Data

Antenna Type: Fixed (Tallysman)

Receiver Type: M8T

Data type: Static

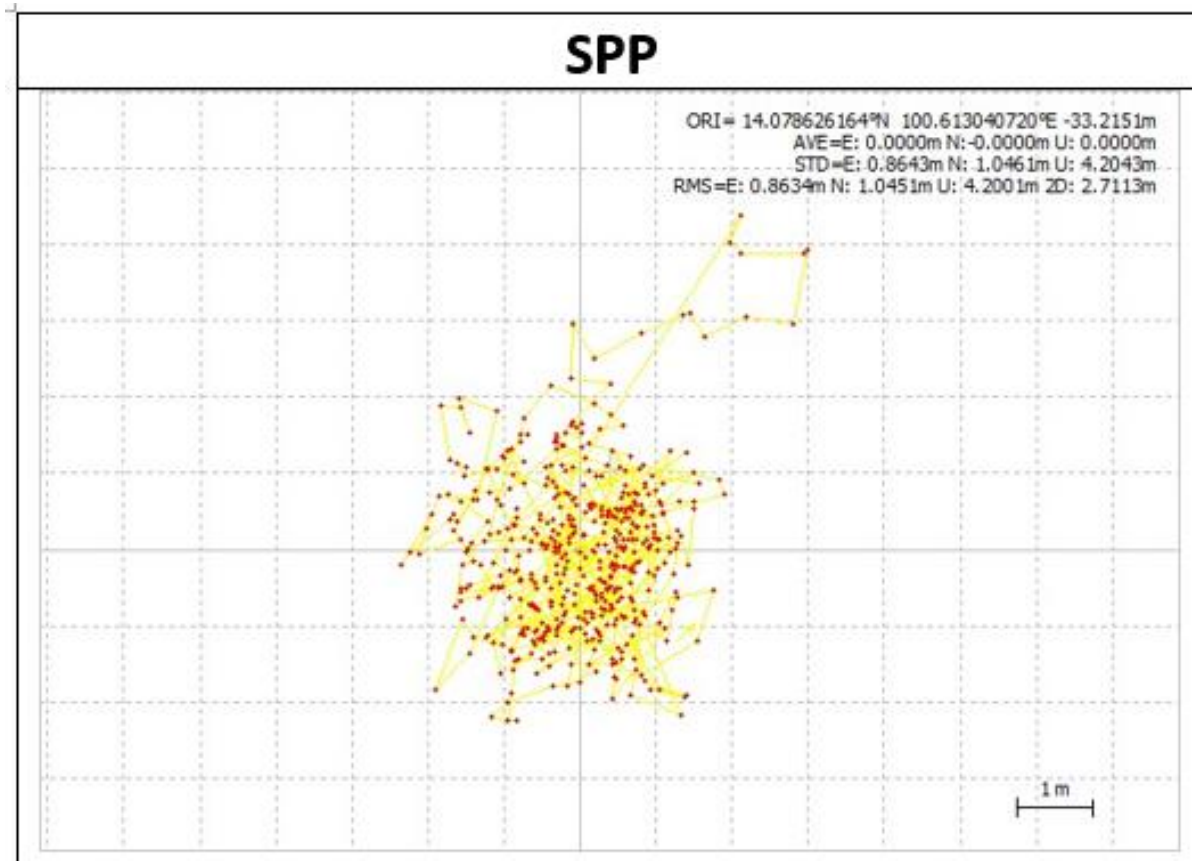
Data processing type: SPP and RTK

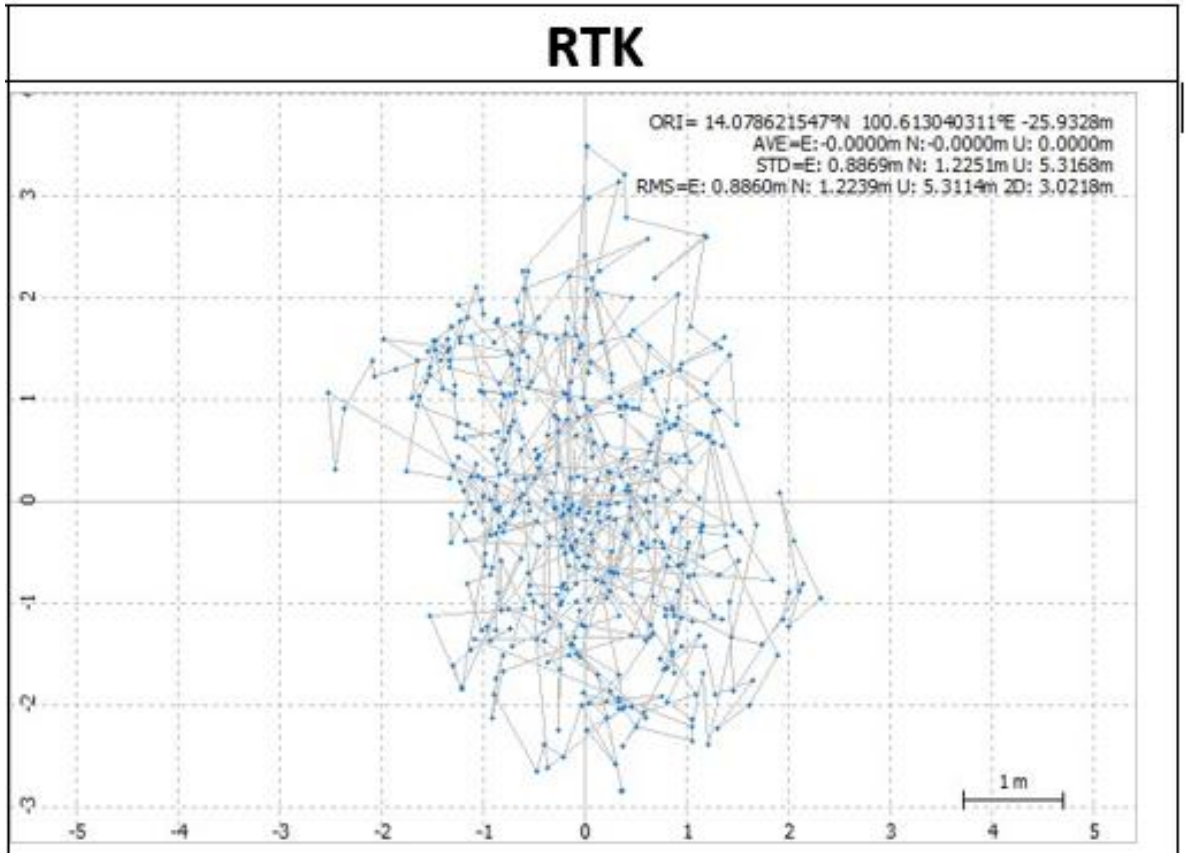
Parameters:

Elevation Mask: 10 & 15 degrees

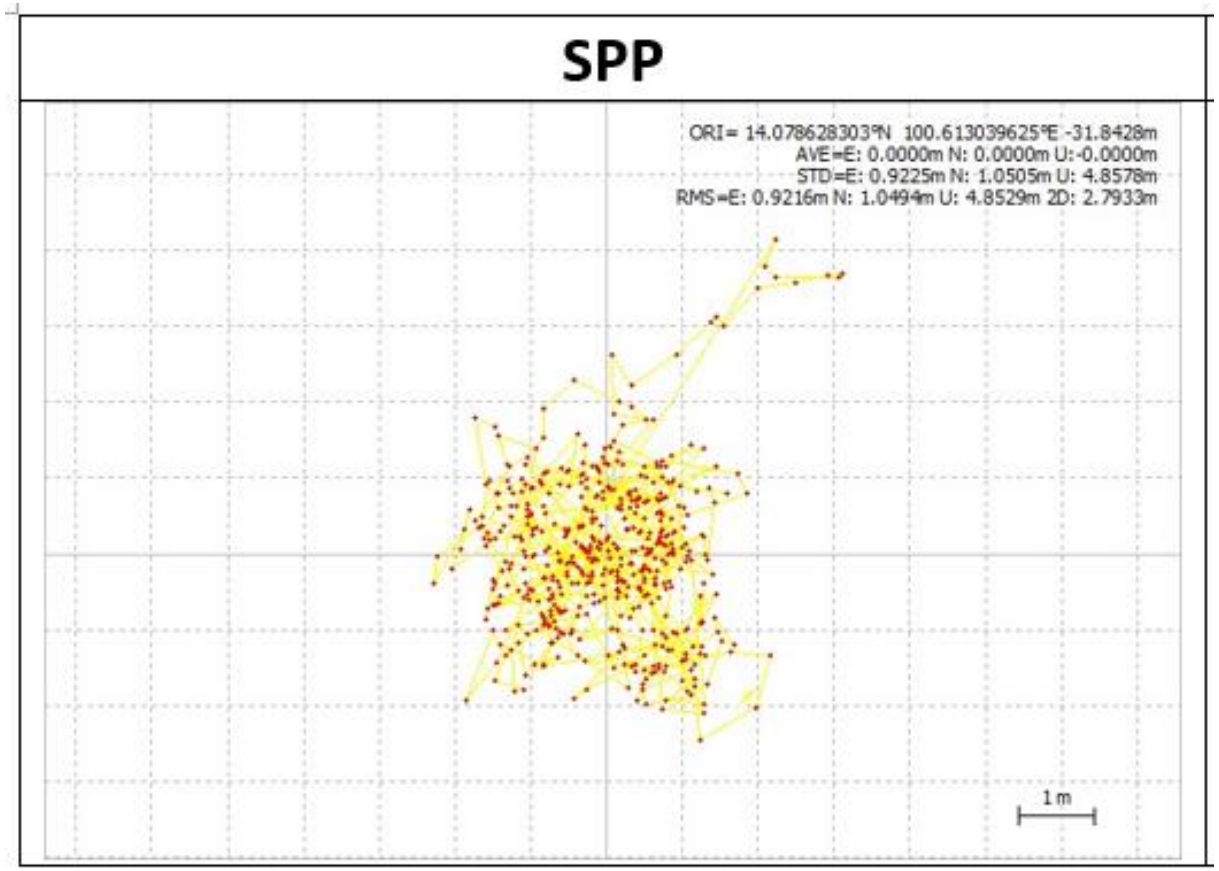
Integer Ambiguity Res: Instantaneous and Continuous

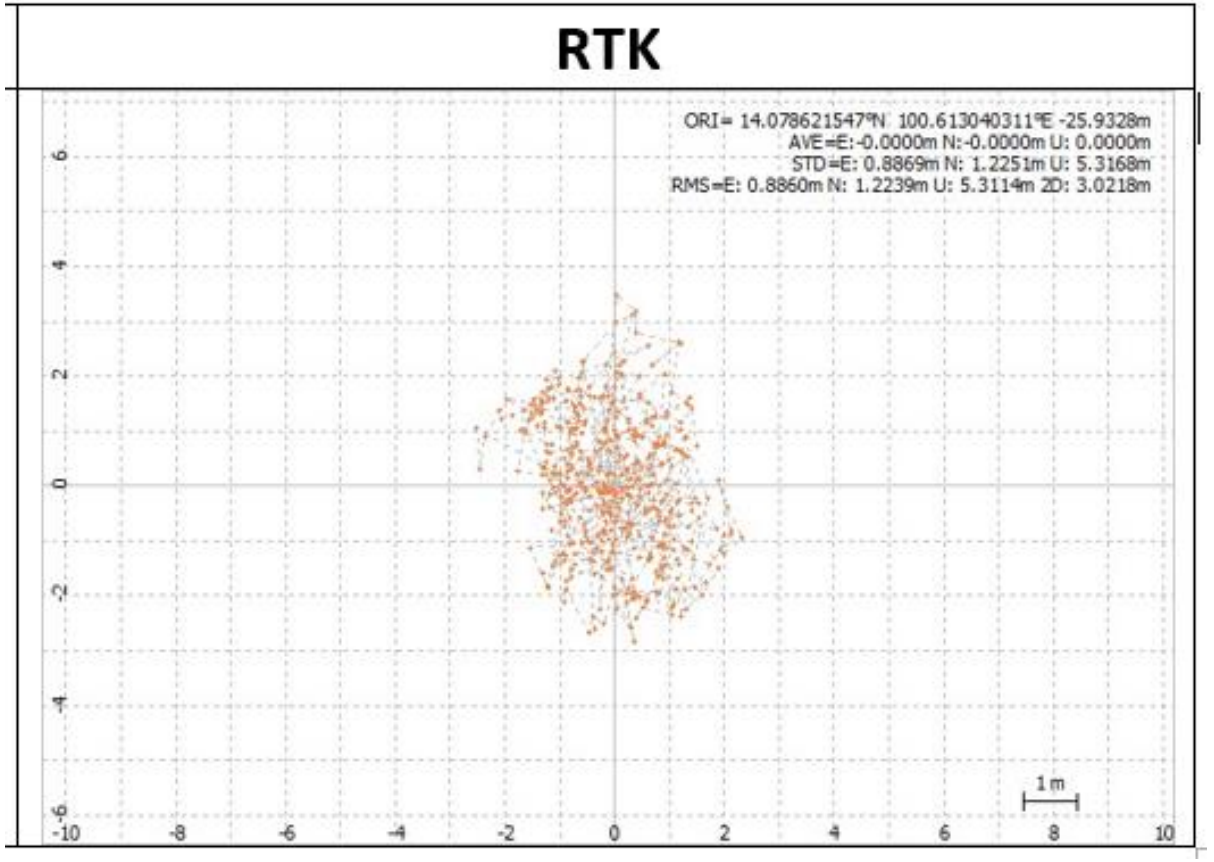
Results- Comparison of collected data (for M8T @10 Deg. Elev. Mask)





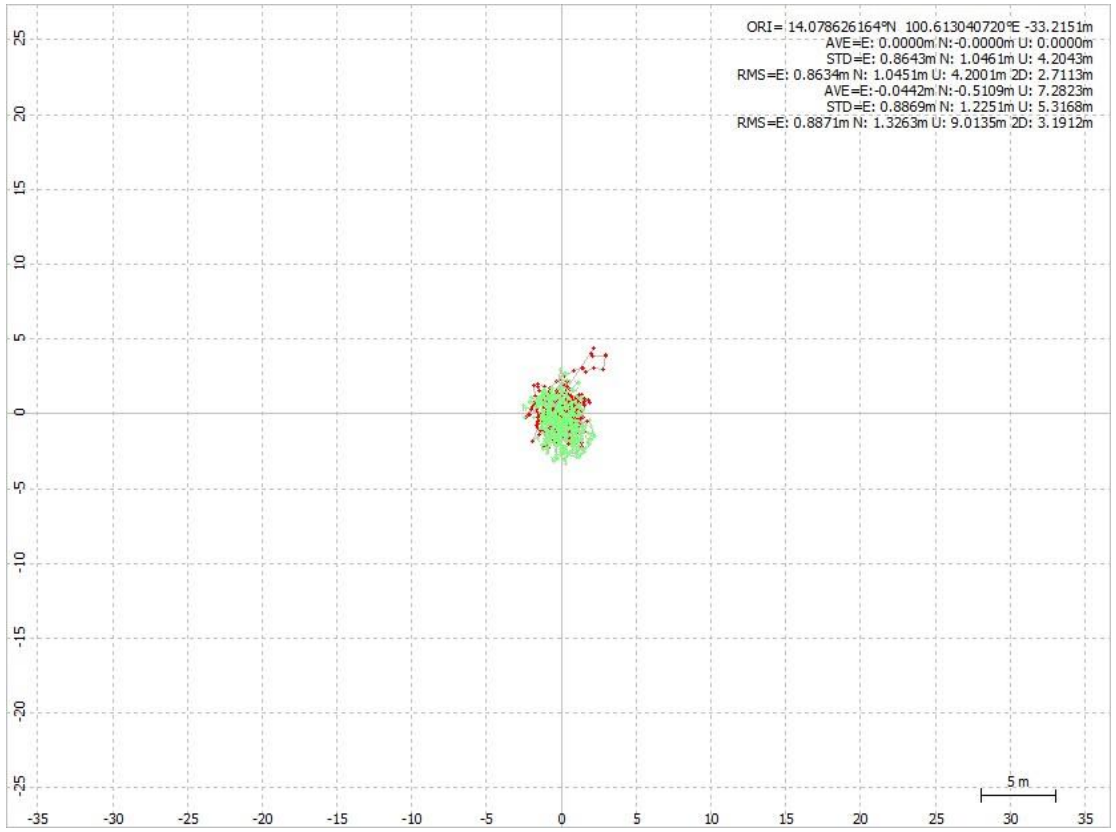
Results- Comparison of collected data (for M8T @15 Deg. Elev. Mask)



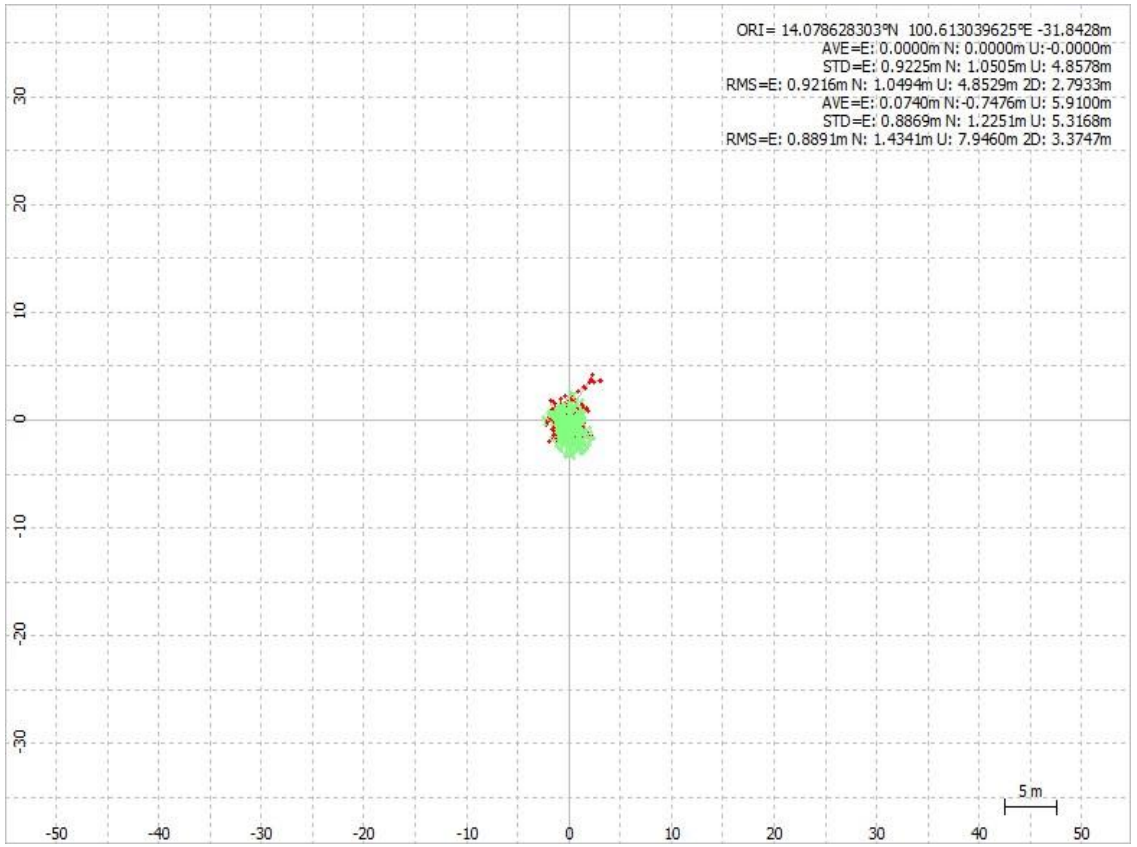


Results- Comparison of collected data (for M8T)

Elv. Mask 10



Elv. Mask 15



Comparison of Accuracy

Data	Setting 1				Setting 2	Error (m)		
	Positioning mode	Frequencies	Elevation mask (degree)	Excluded satellites	Integer Ambiguity Res	STD E	STD N	STD U
Team1static2	SPP		10	N/A	N/A	0.864	1.046	4.204
	SPP		15	N/A	N/A	0.922	1.051	4.858

Base and Rover	Setting 1				Setting 2	Position	Error (m)		
	Positioning mode	Frequencies	Elevation mask (degree)	Excluded satellites	Integer Ambiguity Res		STD E	STD N	STD U
UT_NetR9_M8T	Kinematic	L1	10	C	Continuous	Header	0.012	0.027	0.030
		L1	15	C	Continuous	Header	0.015	0.029	0.043
		L1	**10**	**C**	**Continuous**	**ECEF**	**0.011**	**0.027**	**0.030**
		L1	15	C	Continuous	ECEF	0.014	0.029	0.042
		L1	10	C	Instantaneous	Header	0.581	0.671	1.514
		L1	15	C	Instantaneous	Header	0.624	0.734	1.744

Conclusion

- It has been observed from the results that the best setting for Day 3's measurement is performed using RTK with:
  - 10 degrees elevation mask
  - Continuous integer ambiguity resolution
  - The known position of base station in ECEF format

- From the results it can be said that the use of SPP and RTK data can be utilized on the basis of the user requirement and application.

- For instance, the SPP data might be useful for Regional to Small Level Land Use Land Cover Mapping while the RTK can be utilized in Mining and Military services, where accuracy and precision are the only requirement.

THANK YOU

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TERIMA KASIH

شكرا لكم (shukraan lakum)

धन्यवाद (dhanyavaad)

ধন্যবাদ (Dhan'yabāda)