

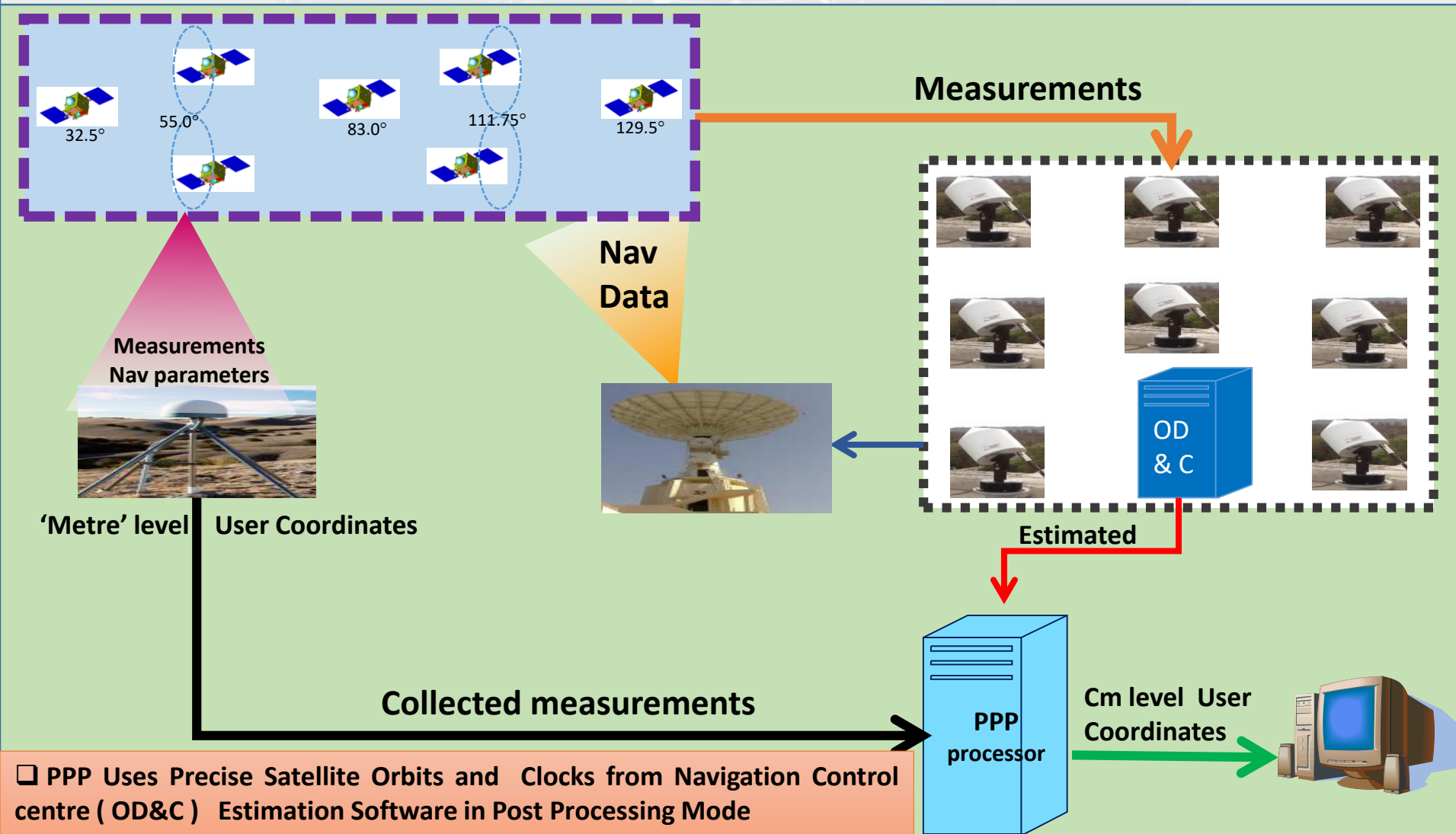


Precise Point Positioning (PPP) with Standalone NavIC

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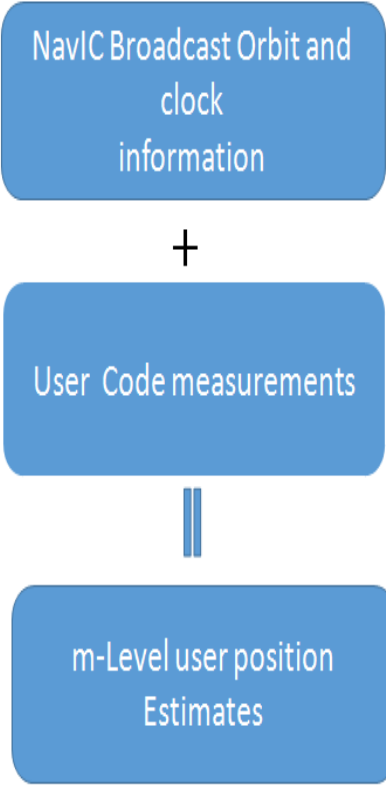
11th Dec 2019
ICG-14, Bengaluru

- The average standalone NavIC user solution determination using NavIC Broadcast parameters is achieved to be better than 10m in near real time.
- In order to further refine the positioning, the proposed technique uses the reference stations dual frequency carrier phase measurements in post facto mode.
- The improved solution is obtained in post processing with latency of 3-6 Hrs with refined orbit and clock parameters.
- The technique adopted uses Forward Backward Forward Extended Kalman Filter (FBF-EKF) with carrier phase processed measurements whose accuracy is better than code range measurements and solving for instantaneous Reference receiver clock offsets.
- Currently the process uses one day span of measurement data to obtain the improved targeted accuracy.

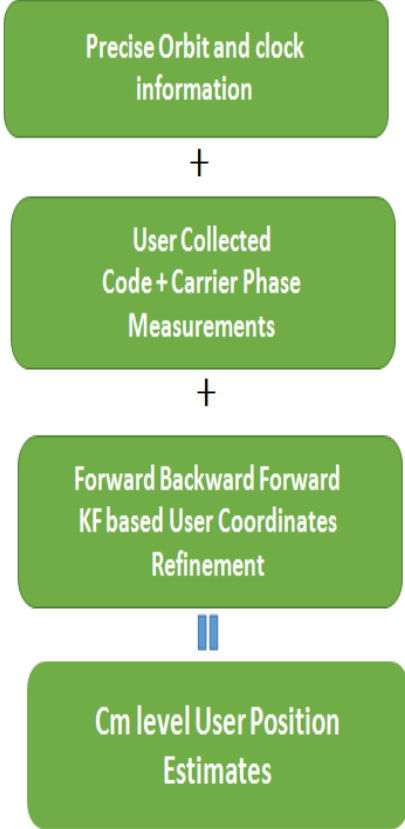


Precise Point Positioning (PPP) allows a single NavIC receiver user to determine position at the centimeter error level in post processing mode using precise satellite orbits and clocks

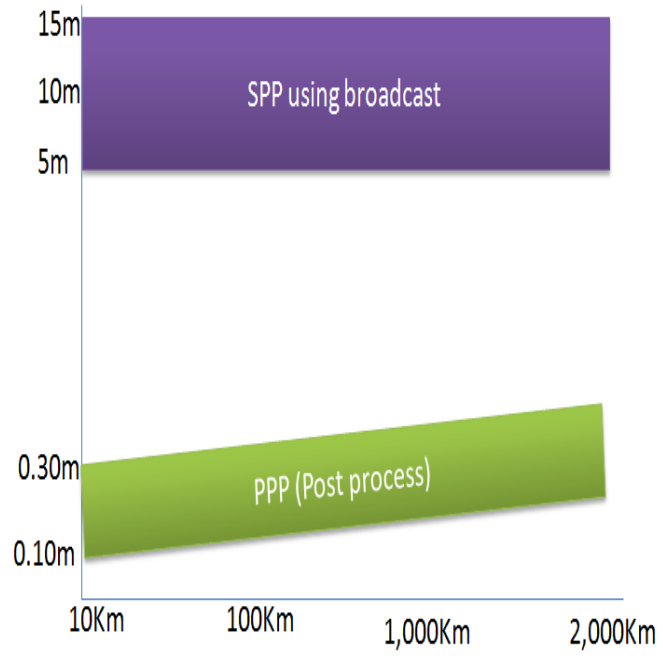
Standard Positioning Service



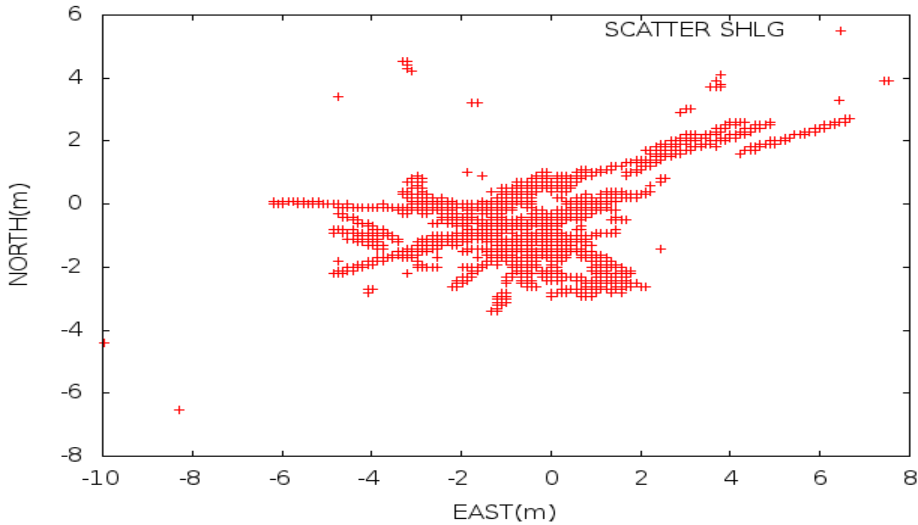
Precise Positioning Service



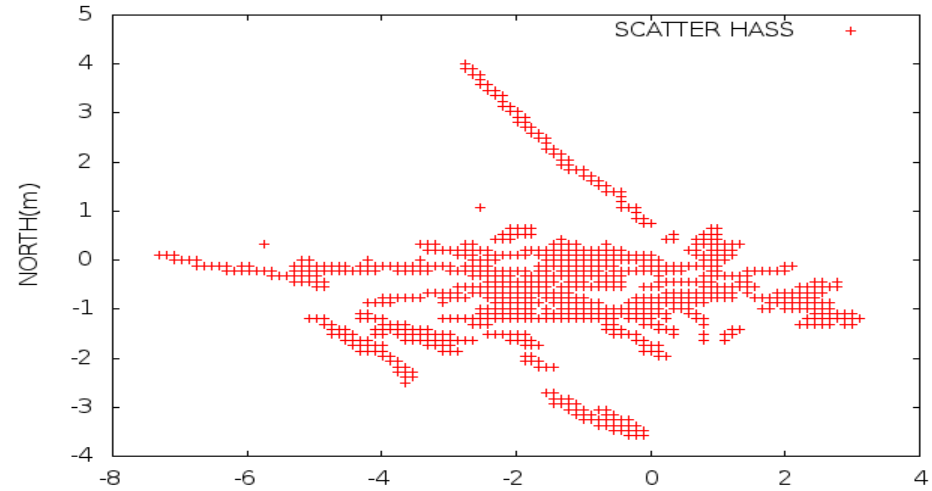
Current Performance Status



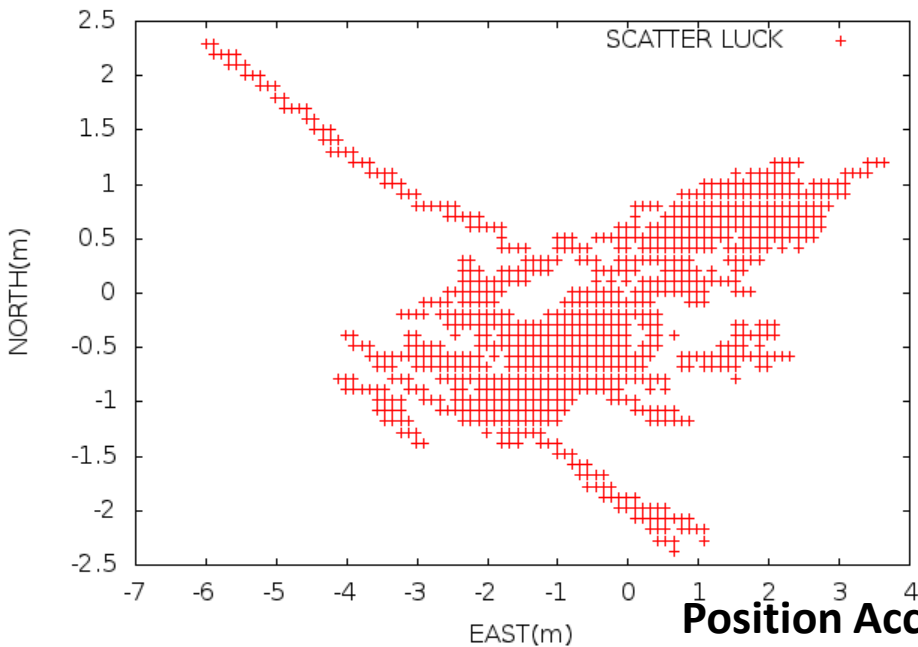
SCATTER PLOT FOR SHLG A DOY :331



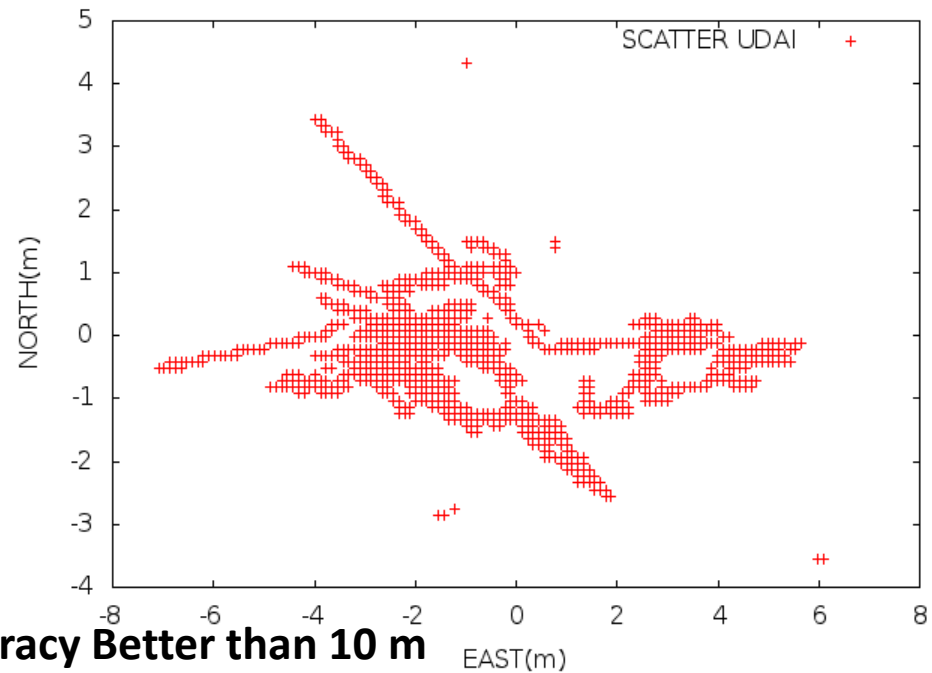
SCATTER PLOT FOR HASS A DOY :331



SCATTER PLOT FOR LUCK A DOY :331



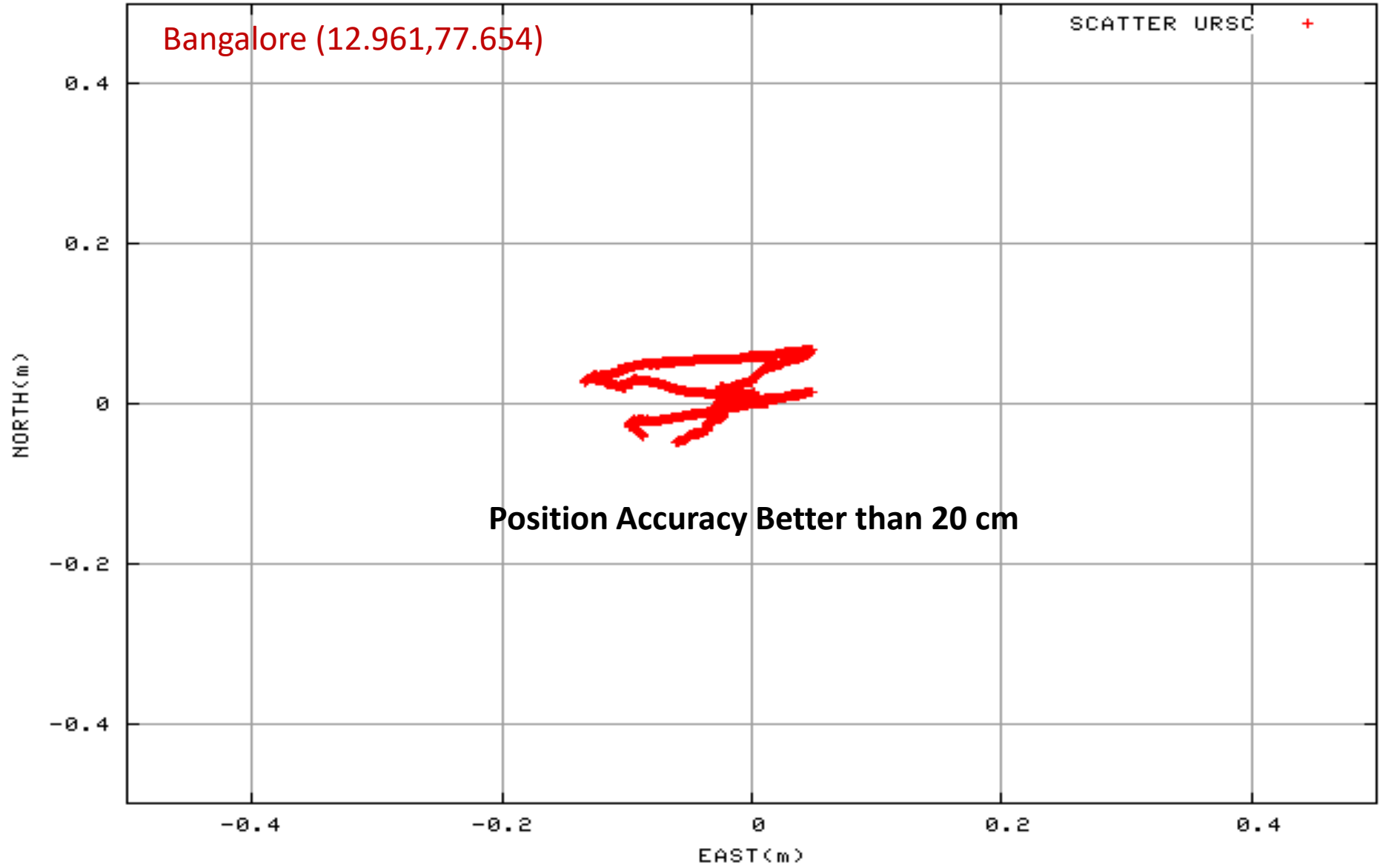
SCATTER PLOT FOR UDAI B DOY :331



Position Accuracy Better than 10 m

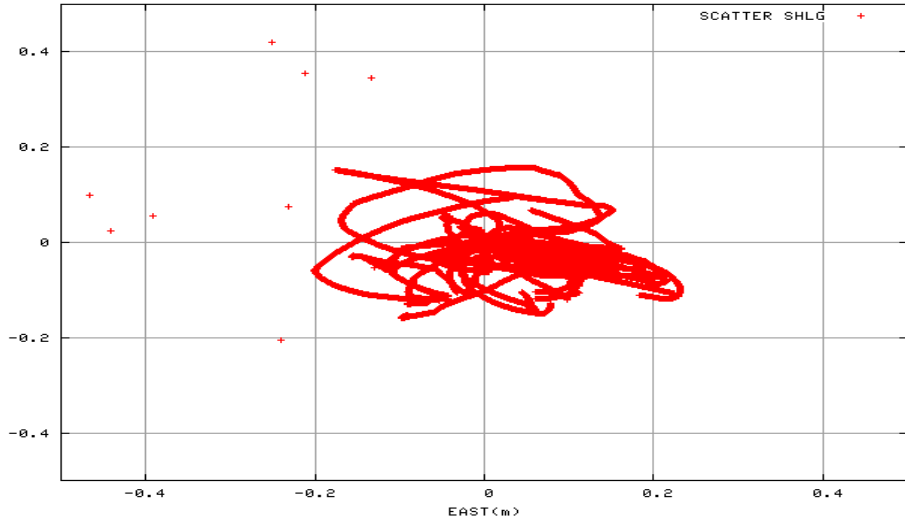
NavIC Independent Receiver Performance With PPP (Post Facto)

SCATTER PLOT FOR URSC STN DOY 172 TO 174

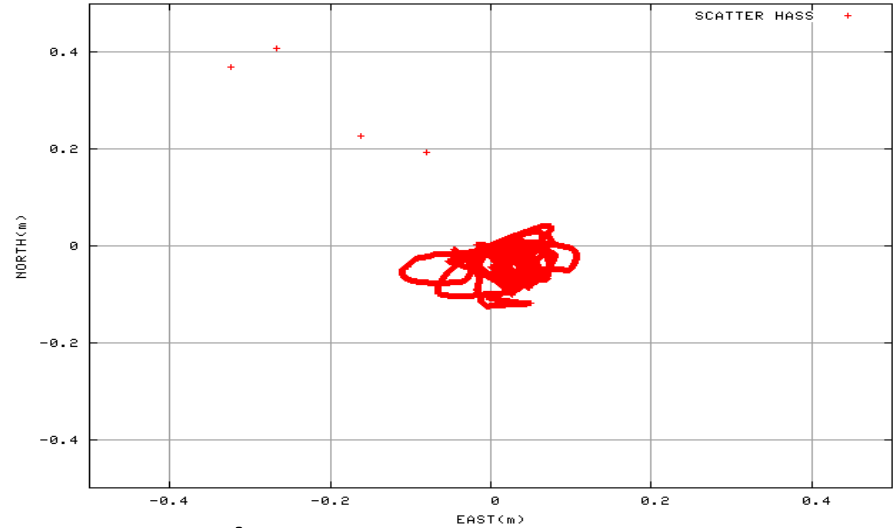


Receiver Performance With PPP (Post Facto)

SCATTER PLOT FOR SHLG STN DOY 230 TO 245

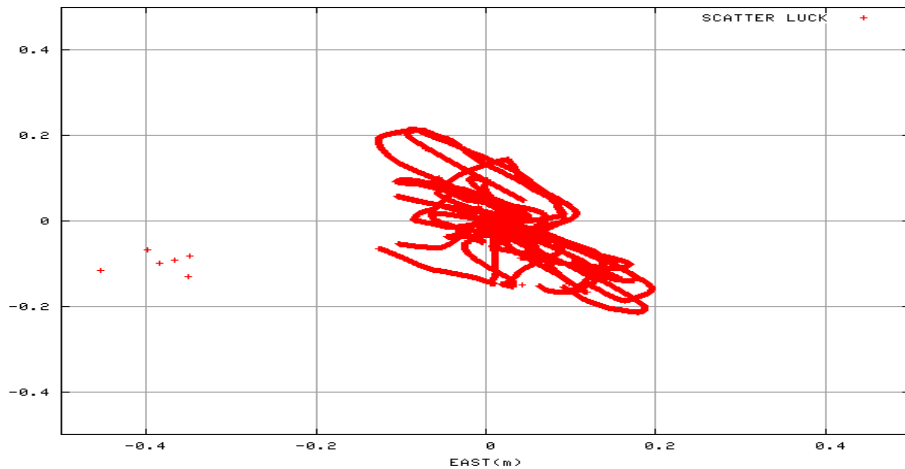


SCATTER PLOT FOR HASS STN DOY 230 TO 245

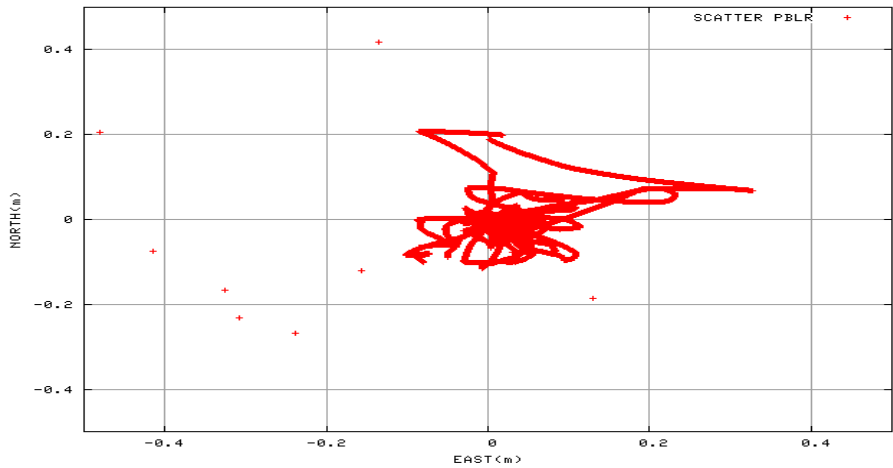


Position Accuracy Better than 20 cm

SCATTER PLOT FOR LUCK STN DOY 230 TO 245



SCATTER PLOT FOR PBLR STN DOY 230 TO 245



- The NavIC user solution thus obtained with an accuracy better than 20cms using smoothed measurement.
- Further improvements on the accuracy is being analyzed, currently this solutions can be used in many low-precision accuracy applications, surveying and precise positioning requirements.

