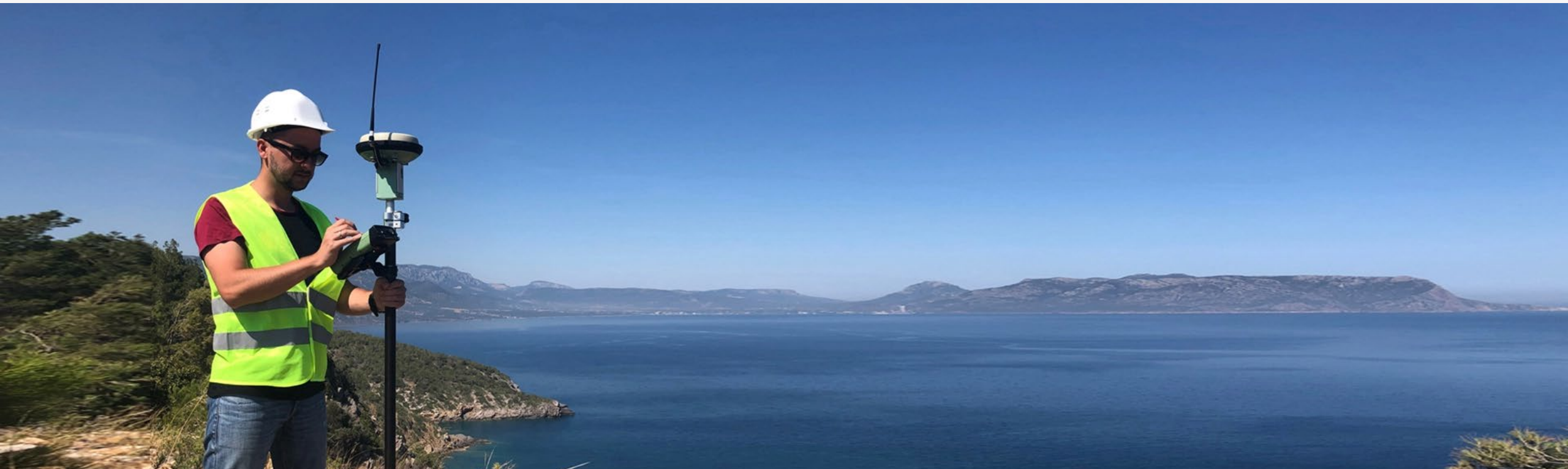
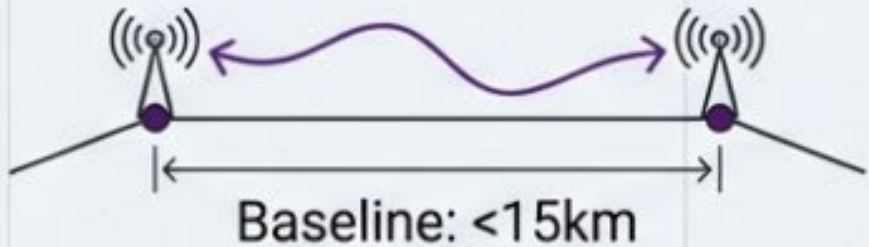


GNSS Survey

A GNSS survey is a satellite-based survey that provides precise positions and elevations, usually referenced to a global coordinate system, and is widely used in modern mapping, construction, and engineering projects.



Relative Kinematic (RTK/Network RTK)



Init Time:
~5 seconds

Accuracy

(Inter)

10–20mm
(Horizontal)

Correction Methods

DGNSS (Differential)



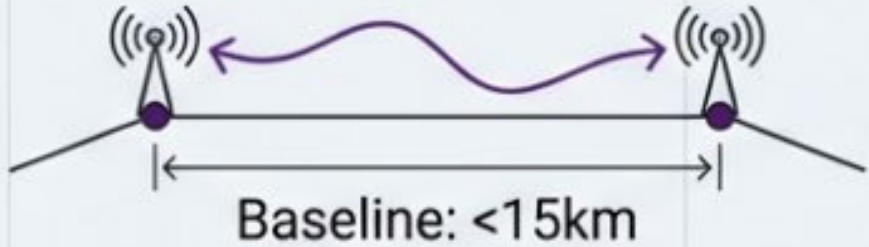
Method:
Phase smoothed code

Accuracy

(Inter)

0.4–1.0m
(Sub-meter)

Relative Kinematic (RTK/Network RTK)



Init Time:
~5 seconds

Accuracy

(Inter)

10–20mm
(Horizontal)

Correction Methods

DGNSS (Differential)



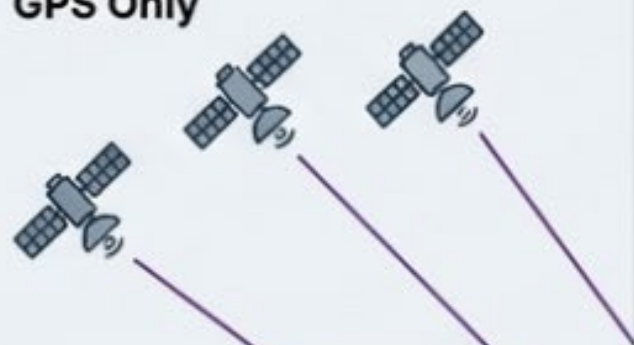
Method:
Phase smoothed code

Accuracy

(Inter)

0.4–1.0m
(Sub-meter)

GPS Only

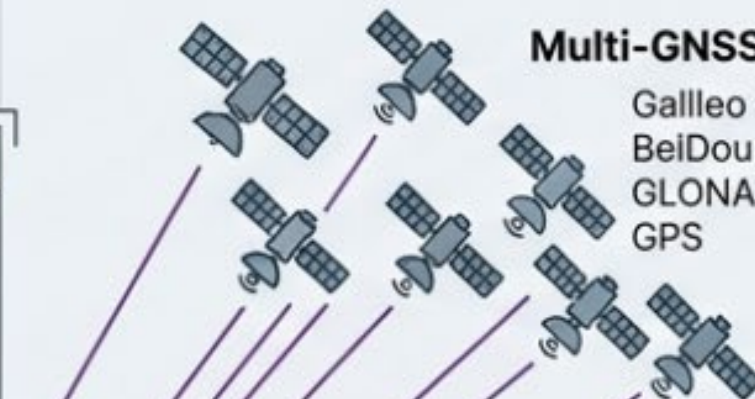


Severe Environments:
Up to **50% Improvement**
in Precision.

Mechanism: Additional
satellites reduce GDOP and
improve convergence time.

Multi-GNSS

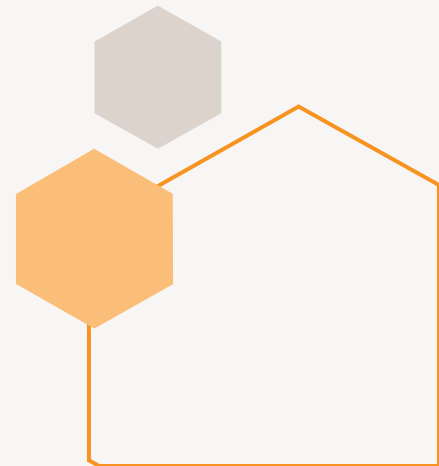
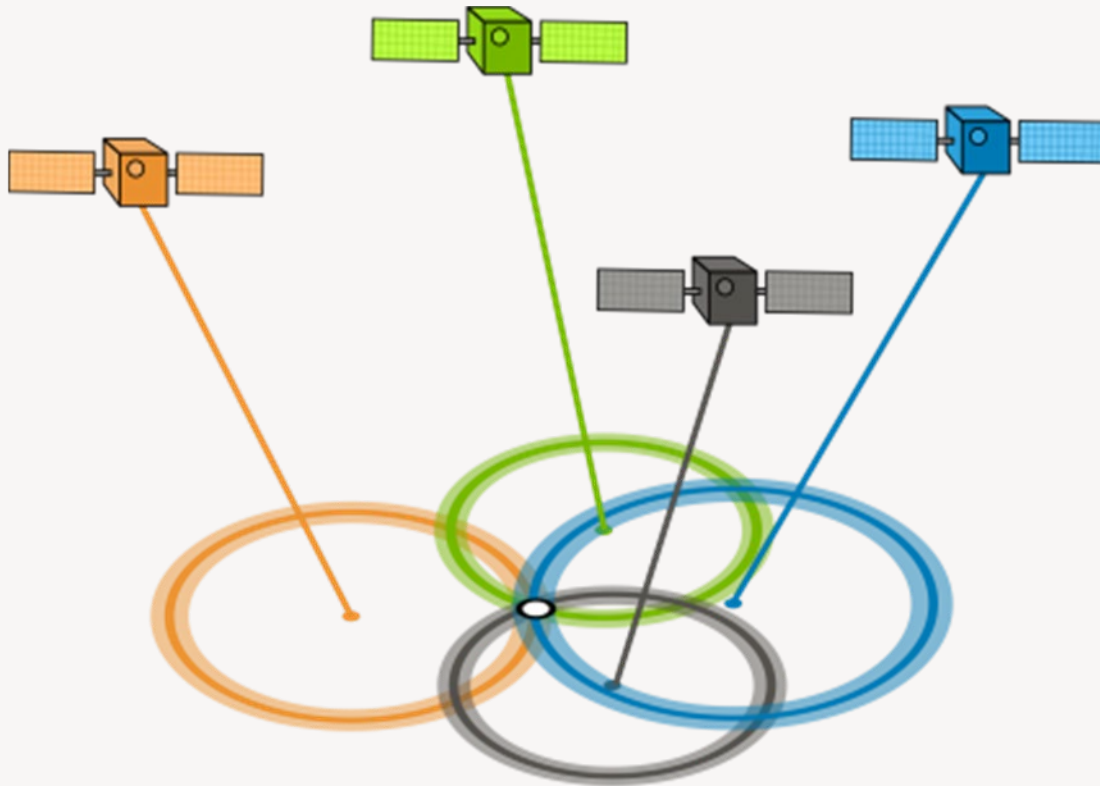
Galileo
BeiDou
GLONASS
GPS



Urban Canyon

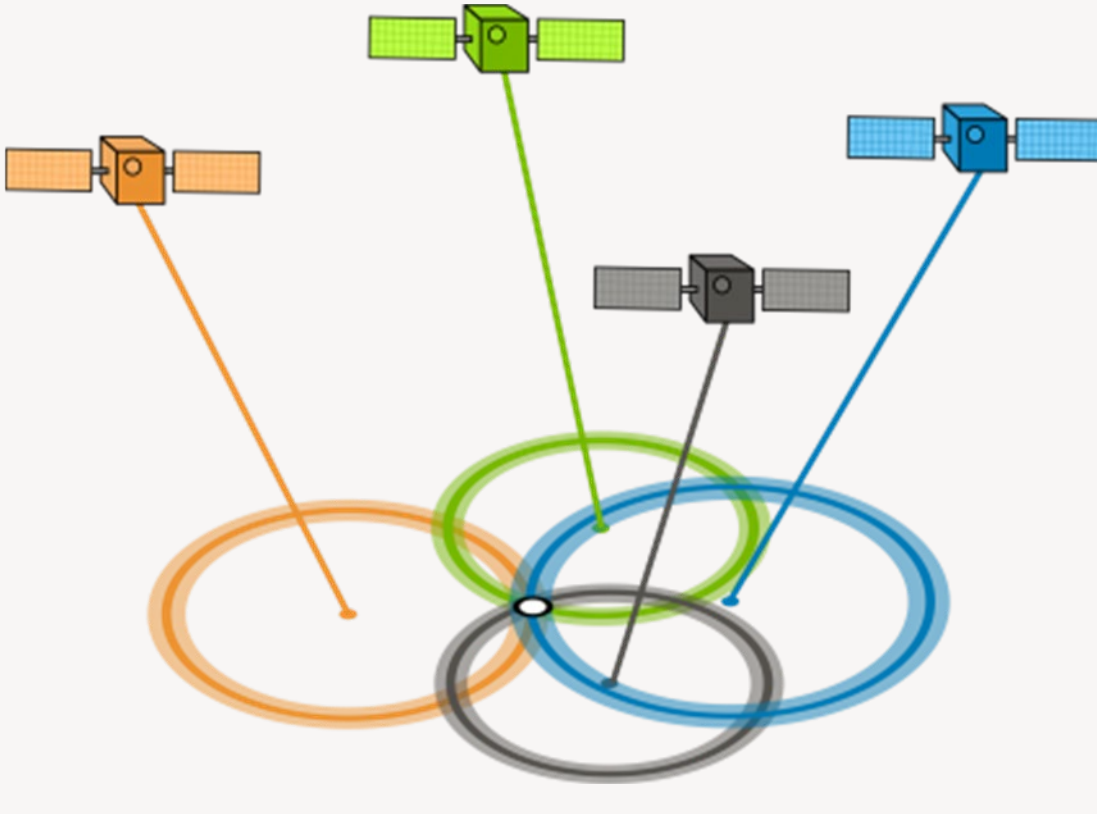
GDOP

GDOP measures the overall effect of satellite geometry on the precision of the GNSS positioning solution.



PDOP

PDOP is a specific type of GDOP that focuses solely on how satellite geometry impacts the accuracy of the 3D position (latitude, longitude, and altitude).



GDOP & PDOP

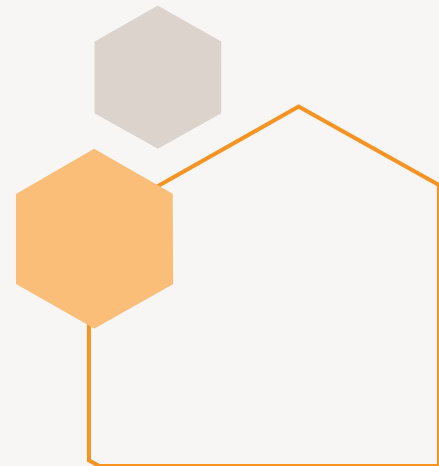
Lower values for both GDOP and PDOP indicate a better satellite configuration, leading to higher positioning accuracy.

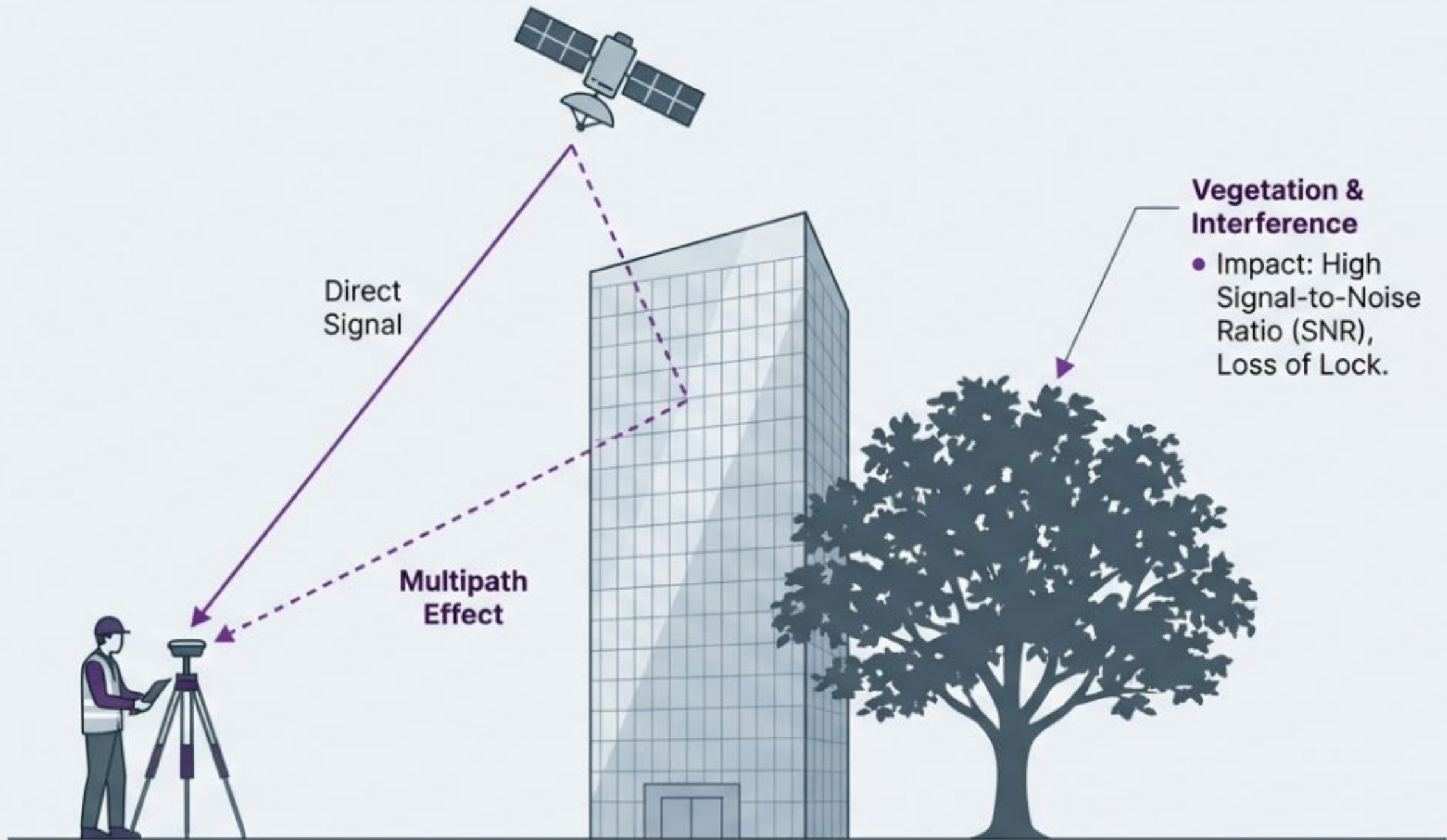
< 3: Excellent satellite geometry. Highly accurate positioning.

3-6: Good satellite geometry. Decent accuracy.

6-10: Moderate satellite geometry. Positioning accuracy decreases.

> 10: Poor satellite geometry. High uncertainty in position estimation.





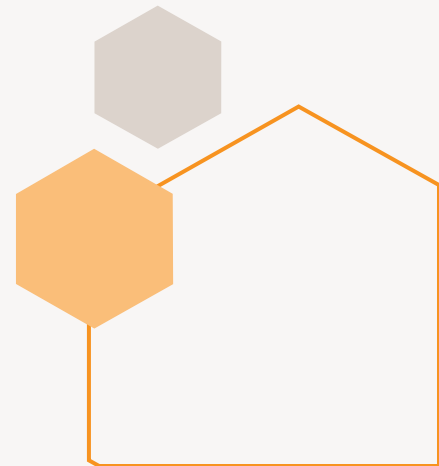
ASSIGNMENT

Assignment Brief:

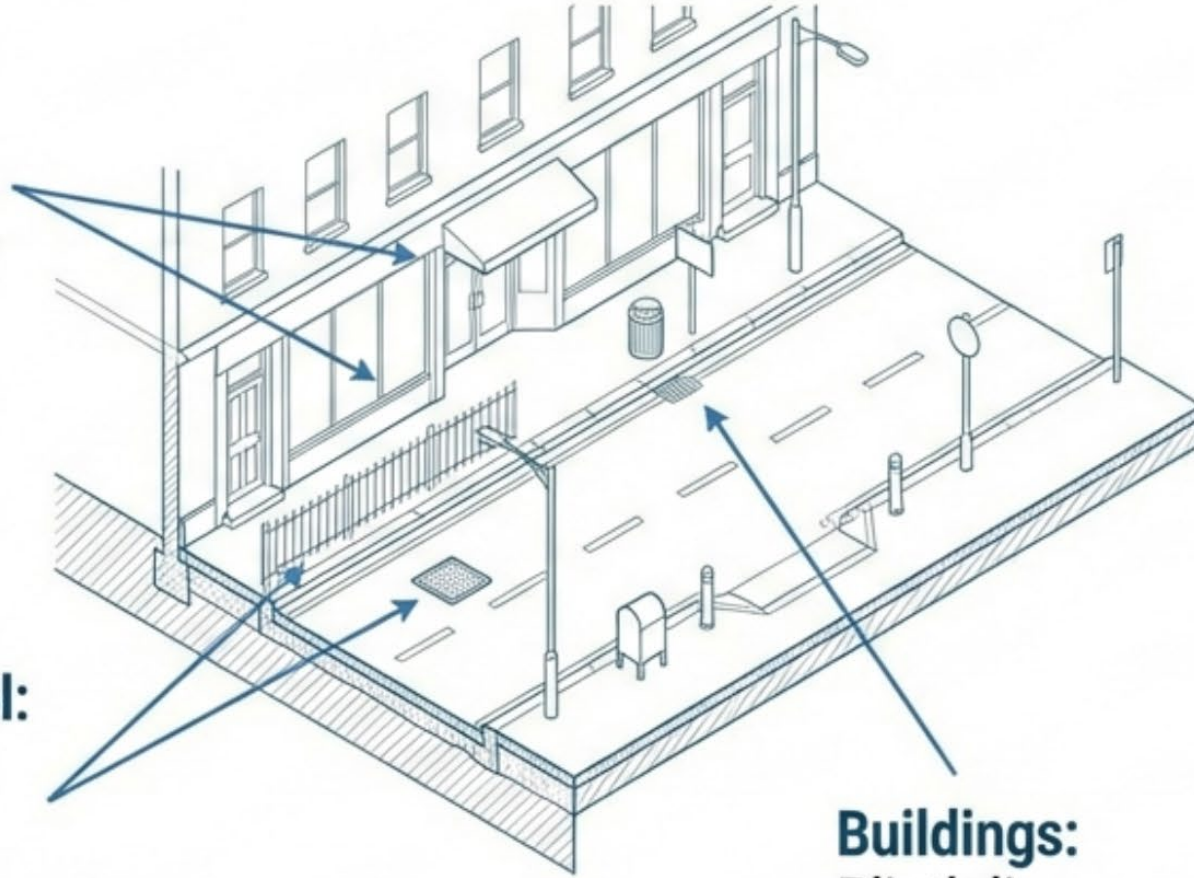
- The area outside the IQ, IM and Fforwm Buildings at UWTSD has recently been transformed into Trinity Gardens. You have been tasked with surveying this newly landscaped area. Upon completion of this survey, you are required to use the information collected to produce an A3 plan of the area showing the As-Built layout.

Objectives:

- To carry out a survey of the area, establishing the accurate positions of features.
- To produce an A3 drawing using AutoCAD detailing these positions to be uploaded as both PDF and DWG.



Overhead:
Canopies,
Lamp Posts,
Signage.

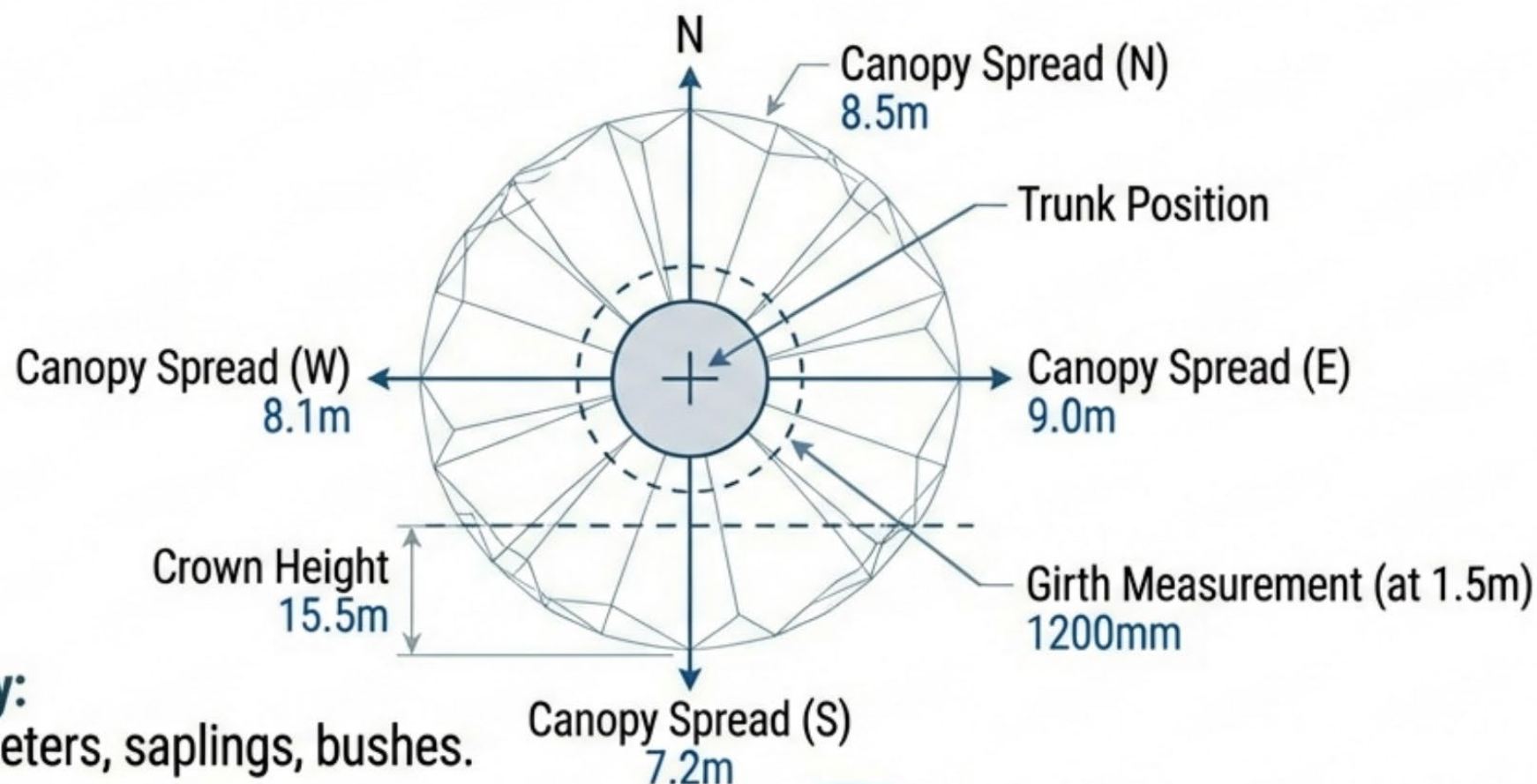


Ground Level:
Kerb lines,
Drop kerbs,
Manhole covers,
Fences, Walls.

Buildings:
Plinth lines,
Threshold levels.

Standard Scope (Band Dependent)

- **Buildings:** Plinth lines, overhead canopies, threshold levels.
- **Roads:** Kerb lines (top/bottom), markings, inspection covers.
- **Boundaries:** Fences, walls, gates, hedges (with heights).
- **Street Furniture:** Lamp posts, bollards, signage.



General Topography:

- Woodland perimeters, saplings, bushes.

Specialist Tree Surveys (BS 5837 Standard):

- Detailed trunk positions & unique ID.
- Species identification (requires arboriculturalist).
- Girth and canopy spread metrics.

“Decisions on what to include are critical to the success of any project relying on survey information.”

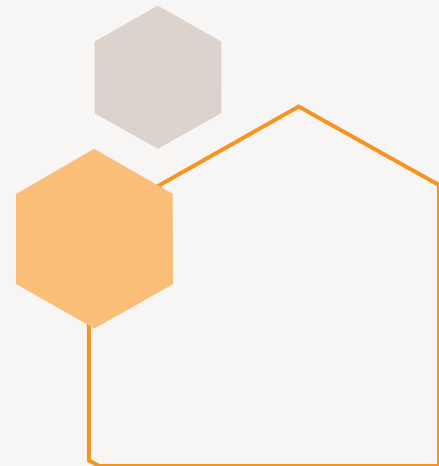
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Safety and Risk Management

A Mandatory Gateway to Commencement



Staff Competence: All staff must be qualified, insured, and hold relevant cards (e.g., CSCS, PTS).



Equipment Verification: All instruments must be calibrated and fit for purpose.

Unless expressly removed, the surveyor is responsible for the preparation of all safety documentation prior to works commencement.