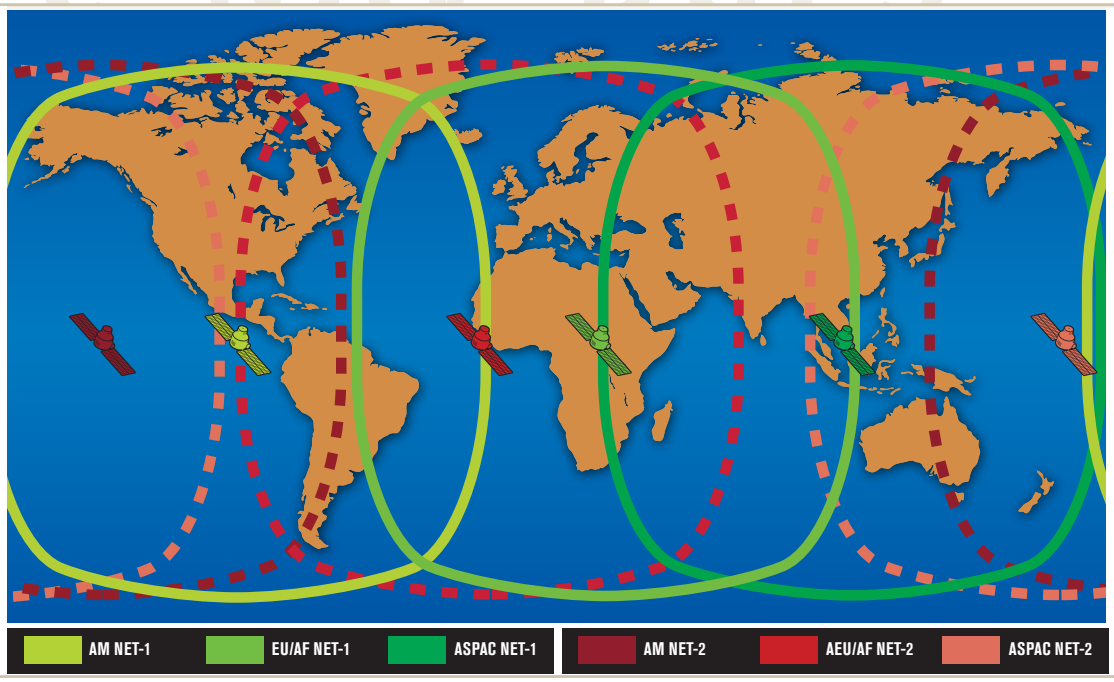
C-Nav
WORLD DGPS

C-Nav® Subscription Service



TAKE A CLOSER LOOK AT C-NAV®:

C-NAV® IS THE LATEST GENERATION OF DGPS POSITIONING SERVICES INCORPORATING CUTTING EDGE TECHNOLOGIES TO ACHIEVE SATELLITE BASED DECIMETRIC POSITIONING WITH STATE OF THE ART USER EQUIPMENT.

- Precise decimetric positioning (1-decimeter horizontal and 3 decimeters vertical).
- Global coverage (72n to 72s) using six geostationary communication satellites to insure 200% coverage
- Redundant land infrastructure (60+ base stations, 2 processing hubs, 6 uplink stations).
- Compact, rugged, easy to install and operate user equipment.
- Global 24/7 customer service when and where you need it.

GSA Contract Holder
FSS Contract GS-07F-5671P

C-NAV GPS GIVES YOU THE WORLD, ONE DECIMETER AT A TIME.

QC CONFIDENCE - WITHOUT THE INCONVENIENCE

C&C Technologies' C-Nav® global positioning service offers a totally new and unique concept in Quality Control through independent solutions. No longer is there need for accuracy compromise or a requirement for two independent vendor systems. C-Nav® has the unique quality of independence and duality inbuilt.

C-Nav® features:

- Worldwide Precise Point Positioning
- Duality and independence inbuilt
- Decimeter level dynamic accuracy
- Mutually compatible generation and application software
- Confidence through real-time user access to the C-Nav® worldwide monitor network
- Regular GPS status updates and notices by email
- 24 hour service on-call backup

REAL-TIME 'GIPSY® (RTG)

With its pedigree in JPL's precise navigation for space vehicles, the proprietary Real-Time GIPSY® solution used by C-Nav® is a major advance on traditional DGPS ground-based solutions, addressing GPS uncertainties where they occur - at source.
All the inherent errors associated with traditional DGPS are avoided.

- Orbit correctors for each GPS satellite.
- Clock offset correctors for each GPS satellite.
- Dual frequency C-Nav® receiver for ionospheric correctors.
- Patented multi-path mitigation software and antenna technology at each C-Nav® reference station.
- Sinko's Earth tides model incorporated.

GROUND SEGMENT

Each C-Nav® satellite tracking station includes a minimum of two active receivers with quality controlled feedback loops ensuring performance metrics are maintained.

- Worldwide network of reference sites augmented with stations from the JPL network.
- Independent A and B dual-frequency engines at each site.
- Real-time comparison of position, accuracy, and precision.
- Simultaneous observations to each GPS satellite from typically seven stations.
- Secure and robust multi-routed communication links backed up by VSAT and ISDN.

CONTROL SEGMENT

Two independent, geographically separated Processing Centers interconnected by high-speed, high-capacity frame-relay feeds.

Each Processing Center:

- Receives the full complement of reference station data (both A and B receivers).
- Two independent production layers - Primary and Secondary.
- Compares the observables from each A and B receiver and independently selects the optimum solution.
- Handles the data cloud completely independently of the other, producing two independent sets of RTG corrections.
- Continuously monitors RTG correctors to ensure there are no errors.
- Sends its RTG correctors independently to the Land Earth Station network for uplink to the NET-1 and NET-2 satellites.

SPACE SEGMENT: NET-1 & NET-2

The C-Nav® space segment is comprised of six geostationary communication satellites providing global hipower L-Band distribution. Uplinked through six Land Earth Stations (LES), configured as NET-1 or NET-2, a minimum of two satellites are visible to every C-Nav® user.

- Each LES is equipped with Primary and Secondary equipment layers.
- Each layer receives corrections from both Control Centers with the Primary layer comparing the two correction data sets for integrity then, independently, selecting the optimum data set for uplink.
- Secure high-speed cable and VSAT with ISDN backups for data flow between the Control Centers and the Land Earth Stations.
- Communication satellites are constantly monitored to ensure service continuity and quality.
- Backup channel capacity available on adjacent satellites over the same regions.
- Ground station network monitors L-Band signal strength, veracity, and precision of received data in a continuous baseline comparison process.

USER SEGMENT RECEIVER TECHNOLOGY

The international C-Nav® user community has a choice of advanced receiver technologies and software. The C-Nav® 1010 and C-Nav® 2050 are the latest generation of receivers to incorporate in their design the combined experience of thousands of satisfied users worldwide.

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