



In our business  
we help people know  
where they are



## Profile

Established in 1992, ASL Advanced Systems Private Limited (ASL) was promoted by the TATA Group companies as a technology focused Company, to work in the areas of advanced systems and technologies, in particular covering electronic hardware, embedded software, and application software for positioning, identification and communication applications. ASL's Vision, Mission and Quality Statement are carved to reflect these aspirations.

Encouraged by the promotional efforts of the then Department of Electronics, now subsumed in the Ministry of Communications and Information Technology, Government of India, on a National Mission to develop indigenous Global Positioning System (GPS) receiver

technologies, ASL pioneered introduction of GPS technologies in India, and developed and supplied GPS receivers for wide ranging applications in Military and Civil sectors. With the success in developing GPS receivers for various users, ASL has provided solutions based on GPS technology in the areas of Navigation (land, marine, and air), Tracking, Mining, Mapping, Timing and Others. ASL has the distinction of being an original designer of GPS receiver chips for SIRF, USA, which is currently one of the world's largest suppliers of GPS chips. ASL also has to its credit several thousand GPS receivers manufactured and supplied to its valued customers.

With the expertise built-up in these areas, ASL has also offered its skills and resources in specific advanced technology development projects dealing with embedded software, digital signal processing and algorithms. To complement its activities further, ASL has expanded to the application areas of Wireless Communication (GPS/GSM/GPRS), Geomatics, G3 (GNSS/GSM/GIS) solutions for Location Based Services (LBS) and Embedded systems for industrial applications.

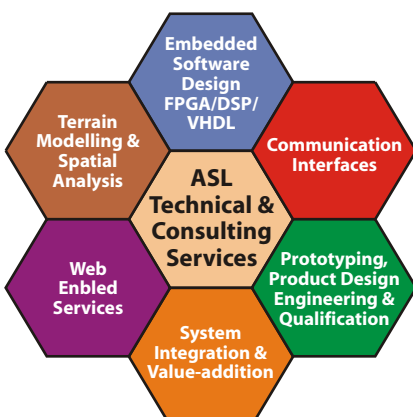
## Quality

ISO 9001-2000 certified company, registered by internationally renowned Perry Johnson Registrars Inc., USA, and, accredited to UKAS (UK), RvA (Europe) and, ANAB (USA). ASL's GPS receivers for Airborne applications are airworthiness certified for military use by the Centre for Military Airworthiness Certification (CEMILAC), in India, and manufactured under the strict quality control procedures of Aviation Electronics Inspection Specification and Documentation Authority (ALISDA) of the Ministry of Defence. ASL's military GPS receivers for land applications are similarly certified by the Directorate General of Quality Assurance (DGQA) of the Ministry of Defence. ASL's quality policy enshrines into it both a customer and a technology focus. ASL has supplied integrated design solutions meeting specific requirements of organisations such as DRDO and others in Civil sector with high technical standards and documentation.



## Technology Orientation

ASL's focus has been to develop advanced technologies relevant to the needs and applications, in particular dealing with areas such as positioning, identification, navigation, timing and communication using Global Navigation Satellite Systems (GNSS). The Department of Scientific & Industrial Research (DSIR), Ministry of Science and Technology, Government of India has recognized ASL's facility at Bangalore as an in-house R&D Centre. Based on its continuous thrust on R&D, ASL also received the coveted DSIR National Award for R&D Efforts in Industry for the year 1997.



ASL offers an extensive range of technical services in the following broad areas:

- Electronic Product Design and Development
- Electronic Product Engineering and Production
- Embedded Software
- Geomatics Applications

**ASL has built up its skills and resources in the following areas:**

**i. Electronic Product Design & Development**

- Microcontroller based design and development (X86, XScale, Motorola 68k, ARM, TIOMAP, Atmel)
- FPGA based design and development (Altera, Xilinx)
- VHDL / Verilog modelling, simulation and synthesis, Matlab Simulink
- General interfaces (Serial Ports RS232, RS422, RS485, USB, Ethernet, ARINC, MIL1553)
- Communication interfaces (GSM/GPRS, CDMA, Proprietary Radio Protocols, Bluetooth, RTCM/ RTCA and custom protocols)
- Electronic product development (schematic, layout, assembly and testing)
- Development of device drivers
- OS / RTOS porting
- Development of navigation, tracking, time sync and event logging products

**ii. Electronic Product Engineering and Production**

- Product design, ergonomics and 3D modelling
- Prototyping, product engineering and packaging
- Military product qualification and type certification
- Military design documentation standards
- Production in small and large quantities

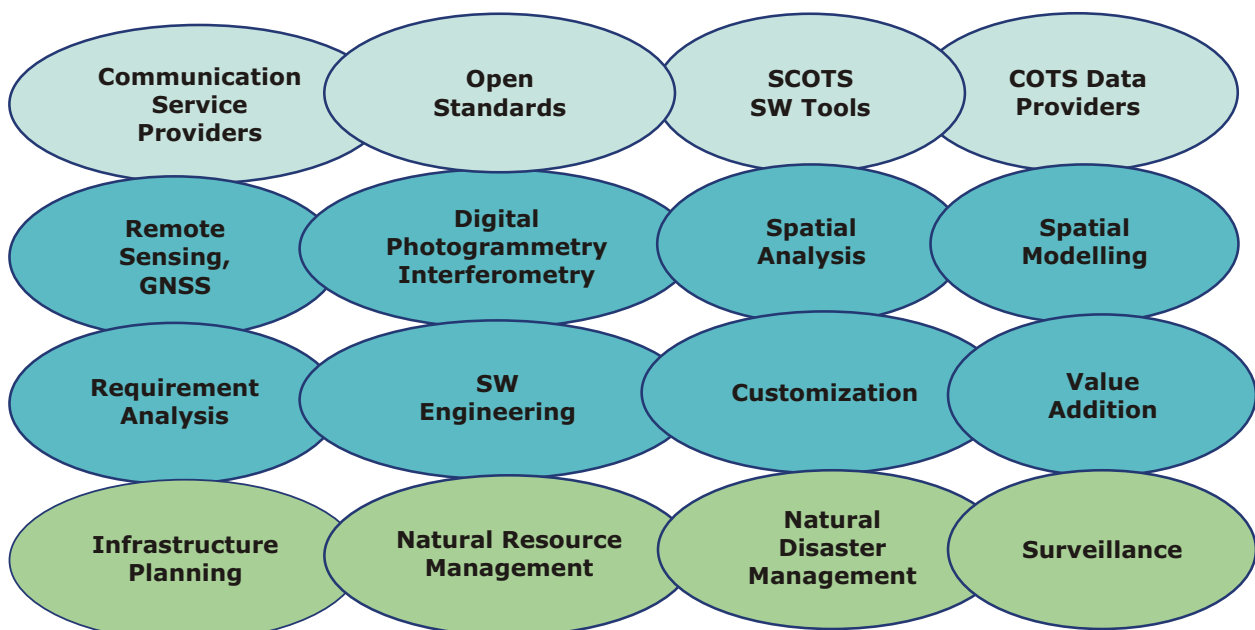
**iii. Software Tools**

- Windows and Linux Platforms
- C, C++, VC++, VB
- ASP, .NET, Java, OpenGL, GTK,
- MS Access, MS SQL, MySQL, Oracle
- Ansys, ProE, Auto CAD, Rational Rose



**iv. Geomatics Application Design and Development**

- Requirement analysis
- Image interpretation and feature extraction using optical and microwave satellite data
- Terrain modelling using digital photogrammetry and SAR Interferometry
- Spatial database development and spatial analysis using GIS
- Design and development of spatial decision support systems
- Data visualisation using digital cartography and Fly through
- Web enabled services using J2EE, Oracle Spatial, SCOTS SW tools
- Location based services (LBS) using open standards
- Applications in infrastructure development, natural resource management, natural disaster management and surveillance



## Development Infrastructure

ASL is housed in a state-of-the-art networked facility in the heart of the business district of Bangalore. Qualified and experienced engineers with Graduate, Post-graduate and Doctoral degrees from leading institutes in India and abroad, manage the activities of ASL. The developers are provided with the latest development tools, and resources, and a conducive environment that nurtures innovation, besides offering challenges in their work profiles.

## Products & Services that ASL has developed and marketed

ASL has developed a range of hardware and software products. Notable among them are:

- GPS 9312A** - Rugged GPS receiver for Armoured Vehicles
- GPSParg 9405N** - Rugged high dynamics GPS receiver for high-speed Aircraft
- GPSParg 9801** - Rugged GPS receiver for Helicopters and Transport Aircraft
- GPSParg 2108** - Rugged GPS receiver with ARINC interface for dual cockpit Aircraft
- GPS 2000** - Rugged GPS receiver for Heavy Vehicles
- SeaGuide GPS 2401** - GPS receiver for Marine navigation & Fishing
- GeoPoint 2407R/ G** - GPS based VTS\* using Radio/ GSM network
- GeoConnect** - Communication Software for GeoPoint 2407R/G
- Nav Track 2510** - Integrated vehicle navigation & tracking system
- GeoTime 2511** - GPS synchronised clock
- ASLData Exchanger** - Field unit for data transfer between GPS receiver and a PC
- AMMA** - Ambulance Monitoring & Management Application for healthcare services
- TMA** - Transport Management Application for Call Centres & other fleet operators
- Geo Event 2501\*\*** - GPS based Event Logger
- Geo Nav\*\*** - In-Vehicle autonomous navigation system
- GPS 2602\*\*** - New Generation GPS receiver
- Geo-VTS\*\*** - Vehicle tracking solution

\* Vehicle Tracking System

\*\* Development Prototypes



ASL also offers its product design, engineering, prototyping, testing, qualification, production and documentation services, along with technical / consulting services in the areas of Embedded software and Geomatics applications.

Manned by a dedicated and experienced team of professionals, ASL's Business Development and Marketing team provides customer interface and support.



## Alliances

In specific areas of business development, ASL works in alliance with its chosen partners. At the time of this writing, ASL has such alliances with some nationally and internationally known organisations. Examples of such alliances are:

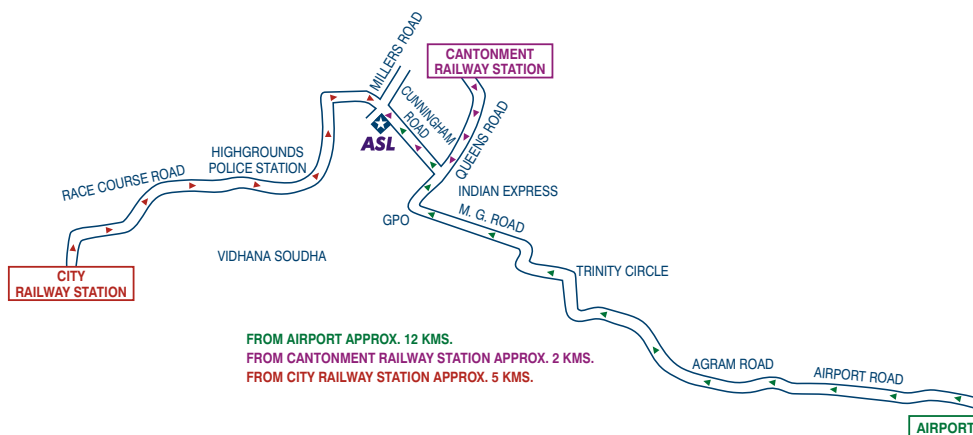
- Agrani (Quick Calls)
- Alcatel Space
- Argo Navigation, USA
- Automotive Research Association of India (ARAI)
- Azimuth Technologies, Israel
- Esqube
- Hazar International, Saudi Arabia
- Indian Institute of Science (IISc)
- Mobile Knowledge, Canada
- PCI Geomatics, Canada
- Picopeta Simputers (AMIDA)
- Tata Power/NELCO
- Tata Consultancy Services (TCS)



## ASL's Valued Customers

ASL has a wide list of its satisfied customers. Notable among them are:

- Agilent Technologies
- Bharat Electronics Limited (BEL)
- BPL India
- C-DAC
- CelCabs & Voyages
- Central Power Research Institute (CPRI)
- Comprehensive Trauma Consortium
- Defence R&D Organisation (DRDO)
- Electronics Corporation of India Limited (ECIL)
- GE
- Hindustan Aeronautics Limited (HAL)
- Indian Armed Forces
- Indian Coast Guard
- Indian Space Research Organisation (ISRO)
- Indian Railways
- Larsen & Toubro India
- National Physical Laboratory (NPL)
- Rolta
- SiRF, USA



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