

ECIL

Product Profile

Control, Automation & SCADA Systems

Radiation Detectors & Instrumentation

Antenna & SATCOM Systems

Communication & EW Systems

Strategic Electronics & Missile Support Systems

Instruments & Systems

Integrated Security Solutions

Servo Products & Inertial Navigation Systems

Encryption, IT & e-Governance

Electronics Corporation of India Limited

Control, Automation & SCADA Systems

Control & Instrumentation Systems

Control & Instrumentation encompassing the entire Nuclear Fuel Cycle from prospecting to Waste Immobilisation comprising Reactor Control, Reactor Safety, Turbine Start up and Monitoring, Radiation Detectors and Sensors. Also, C&I and SCADA Systems for Petroleum Pipeline, Refineries and Chemicals etc.

Supervisory Control and Data Acquisition (SCADA) Systems

Offshore Oil Platforms, Crude, Product and Gas Pipelines, Energy Management Systems for Steel Plants.



Control Room Equipment Designed, Manufactured and Installed by ECIL



Purged Control Panel for explosive / hazardous areas

Remote Telemetry Unit (RTU)

For collection of remote plant data in geographically spread plants and transmission to a central location (Master Station).



PROGICON 4000 & 5000

Distributed Control Systems

Thermal Power Plants, Process & Chemical Industries.

Programmable Logic Controllers (PROGICON 4000 & 5000)

ECIL's new generation PLC Systems are designed based on open system architecture that adheres to various international standards like IEEE 1014, IEC 61131 & IEEE 802.3.



Full scope Replica Training Simulator for Power Plant Engineers / Operators

Power Plant Training Simulators

Full Scope Replica Simulators for 220 & 500 MW Thermal Power Plants and all Nuclear Power Plants.

Radiation Detectors and Instrumentation

HV and Spectroscopy Amplifiers

Module Bins and Power Supplies

Doorway Monitors

Hand Held Survey and Contamination Monitors

Spectroscopy Systems

Environmental Monitoring Systems

Radiation Survey Meters

Pocket Dosimeters

Multi Channel Analyzers

Whole Body Contamination Monitors

Radiological security systems like:

- Vehicle Monitoring System
- Limb Monitors
- Portal Monitors.



Portal Monitoring System



Hand Held Radiation Survey Meters



Pocket Dosimeter



Environmental Monitors



Contamination Monitor



Doorway Monitor



Linear Variable Differential Transformer

Antenna & SATCOM Systems

Earth Station Antenna for Satellite Communications

Mobile Ground Remote Sensing Station for with Genset & Shelter

Stabilised Antenna platform unit for Multimode Radar

32 Mtr. Deep Space Network Antenna for Moon Mission Project

0.35 m Ka Band suitcase Antenna and Portable sensitive Antenna

Single Axis Mono Pulse antenna with remote access control

Closed User Group V-Sat Networks; Ship-borne Terminals

Stabilised Satcom Terminals to UAVs and Aircrafts



Earth Station Antenna



Mobile Ground Remote Sensing Station



32 M DSN Antenna for Chandrayaan Moon Mission



Antenna Stabilisation Platform



Suitcase Antenna



VSAT Antenna



Single Axis Tracking Antenna



3M SATCOM Terminal at Antarctica

Communication & EW Systems

EC 3060 Communication System

EC 3060 Communication system with frequency hopping & Encryption for ship to ship, ship to shore and ship to air communications on sail even in dense electro-magnetic field often encountered in war field.



Radio EC 3060



Radio EC TR2400

EC TR2400 HF Communication Systems

TR 2400 HF Voice, Data & email Communication System with Encryption, frequency hopping, Automatic switch control etc. for long range communication needs.

EC2 M7 Digital V/UHF Transmitters and Receivers

M7, IP enabled, V / UHF Transmitters and receivers for a variety of needs including ground to air ATC & net-centric communications needs, immune to Jamming.



Radio EC2 M7



Airborne Speech Secrecy System

Speech Secrecy System

EC4480 Speech Secrecy System with two dimensional encryption operating in HF/ VHF / UHF channels for air borne applications.

COMINT Systems

Tailor made COMINT systems for spectrum monitoring, direction finding, location fixing, and signal analysis etc. operating from HF to Microwave frequencies.



Integrated COMINT System

Communication & EW Systems

Jammers

A variety of Jammers such as RCIED Jammers, Cell Phone Jammers, Convoy Jammers etc., are manufactured by ECIL for meeting special operational requirements of Police and Paramilitary Forces.

RCIED Jammers are used for detecting and pre-detonating RCIEDs.



Convoy Jammer

Convoy Jammers

Convoy Jammers are used for providing security to VVIPs.

Cell Phone Jammers

Cell Phone Jammers capable of jamming CDMA, GSM, EGSM and 3G services and are for use in Prisons by State Police organizations.



Mobile Jammer

ST Radar

Stratosphere Troposphere Radar, also called Wind Profile Radar, is used to find the wind profiles in the layers of atmosphere upto a height of about 20 Kms using Doppler's effect.

Microwave Components

ECIL manufactures a full range range of Microwave components for a variety of professional applications



Microwave Components

Electronic Warfare Systems

ECIL, as a consortium partner, has supplied a large, multi-vehicle EW System, designed and developed by DRDO. ECIL has also developed LRUs and integrated various COM Segment entities. ECIL manufactures scaled down versions of these EW systems for paramilitary and defence forces in India.



Integrated Electronic Warfare System

Strategic Electronics & Missile Support Systems

Air Traffic Control System

State of the art system meeting ICAO specifications for the Air Traffic Control. The system includes Automatic Dependent Surveillance System with Controller, Pilot Data Link, Flight Data and Radar Data Processing System integrated to AMSS & ATIS systems. Operational at several Airports in India.



Air Traffic Control System



Airport Terminal Information System (DAVIS)

Digital Airport Terminal Information

VHF Voice Transmission, Direct ADS uplink on CPDLC. Messages input directly from MET and AMSS. ATIS input through PC.

Synthesized VHF ATC Transmitter Receiver System

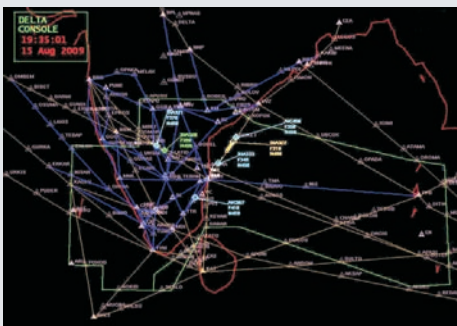
VHF Ground to Air Communications / Air Traffic Control Systems - Large number in use by Airports Authority of India at various Airports in the country.

Automatic Message Switching System (ATN compatible)

For switching and routing of messages on dedicated networks of Civil Aviation, Telecom etc. Used extensively by Airports Authority of India, across the country. State of the art system that includes Automatic Self Briefing, NOTAM Automation etc. Also installed at Airports in Nepal and Yemen.



Automatic Message Switching System



Civil Radar Display System

Civil Radar Display System (CRDS)

To provide an effective all round air defence, all national resources are integrated for threat evaluation and management. In the Civil Radar Display System (CRDS), flight data from radars installed at Airports as well as from Flight Data Display System (FDPS) is transferred to the Air Defence Direction Centre (ADDC) in real time and displayed.

Strategic Electronics & Missile Support Systems

BrahMos Missile System

The BrahMos missile is a shore based supersonic weapon system for targets which are static, single and in a group. Combat elements are developed based on C⁴I concept to plan and coordinate the combat operations of the weapon Complex.

Mobile Autonomous Launcher

The Mobile Autonomous Launcher (MAL) is capable of receiving the target information from Mobile Command Post (MCP) and provides an interface to the Fire Control System. MAL is realized in a NBC and EMI / EMC protected self-contained shelter on a TATRA 12x12 vehicle. This facilitates firing of Missiles against targets upto a distance of 295 km.



Mobile Autonomous Launcher for BrahMos

Mobile Command Post

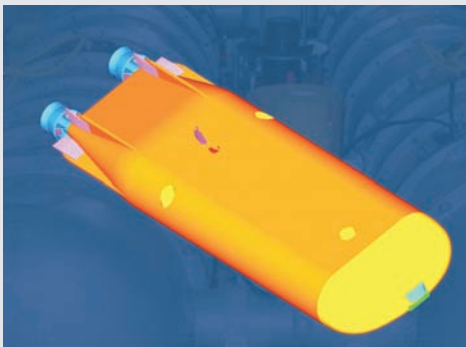
The main role of MCP is planning the mission Identification of suitable MAL for effective neutralization of target and issue of launch order to MALs.

Missile Squadron Control Centre (SCC)

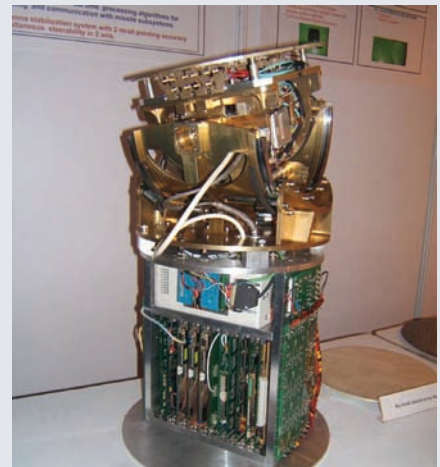
The Missile system architecture is based on squadron headquarters which can affect command and control of two firing units. The central acquisition radar (3D CAR) at squadron level does the principal surveillance function. The Squadron control center provides a coherent single integrated air picture and is also responsible for determining the response to an emerging air threat and assign targets to individual firing units for engagement.

RF Seeker

ECIL developed RF Seeker System, an air borne monostatic pulsed Radar System to detect and track targets coming from opposite direction.



Autonomous Under Water Vehicle



RF Seeker

Autonomous Under Water Vehicle (AUV)

The AUV is first of its kind being developed and productionised by ECIL. It is very small in size and operates around a mother-ship from where it is launched, controlled and recovered.

Instruments & Systems



Nucleonic Level Gauge

Nuclear Instruments and Detectors

Beta Counting System, Tritium in water and air Monitors, Liquid Scintillation System, Gamma Spectrometer with accessories, Uncompensated Neutron Ion Chambers, Boron Coated Counters, BF₃ Counters Radiation Monitoring Systems, Criticality Alarm, Doorway and Portal Monitors etc.

Analytical Instruments

Double and Single beam UV - VIS Spectrophotometers and Atomic Absorption Spectrophotometers, Digital Mercury Analyser, Micro-plate Reader and Radio Isotope Calibrators.

Health Physics Instruments

Gamma Zone Monitor, Environmental Radiation Monitor, Gamma Radiography Survey Meter, Hand & Foot Contamination Monitor and Portal Monitors.



PC-based ELISA Reader

Industrial Instruments

Nucleonic Thickness Gauging System, Radiometric Thickness Gauge, Radiometric Density Gauge, Radiometric Belt Weigher, Nucleonic Level Gauge, On-line Coal Ash Monitor, Nucleonic Moisture Gauge etc.

Medical Instruments

PC based ELISA Readers and Fast Medical Scanners



Nucleonic Thickness Gauging System

Expendable Bathy Thermograph (RSC 10 A)

Measures oceanic temperatures as a function of depth and provides recording of data on Graph Sheet. Interfaced to Personal Computer System

Ship Installed Radiac System (SIRS-4012)

State of the art design for installation onboard Naval ships for monitoring Gamma Radiation in and around the Ship for early warning.



Expendable Bathy Thermograph (XBT)

Integrated Security Solutions

X-ray Baggage Inspection Systems

Full range of Inspection systems for Parcels, Baggage, Cargo, Air Pallets, Containers and Vehicles at Airports and at all key and sensitive installations for restricted areas.



X-Ray Baggage Inspection System for baggage screening at airports etc.



Access Control

Access Control, Perimeter Protection and Intrusion Detection Systems

Fully integrated total security system solutions provided by ECIL include total perimeter protection for sensitive installations, Intruder detection, Access Control, Computer based Identity Card-Issue System, Personnel Screening and Closed Circuit Television etc.

Vehicle Access Control Systems

VIP entry, restricted areas entry, licence plate authentication, driver authorisation, vehicle identification etc.



Components of Fire Alarm System

Fire Alarm Systems

For high-rise buildings, hazardous areas etc. comprising smoke, heat and flame detection coupled with manual call points providing audio visual alarms in case of fire. Also addressable fire alarm systems supplied.



Console of Closed Circuit Television with CCTV Camera as inset

Integrated Security Solutions

ECIL is India's premier security systems integrator and solution architect. Long Range RFID Readers, Under Vehicle Surveillance Systems, Active Bollards, Boom/ Wedge / Flap Barriers, Tyre Killers, Road Blockers, License Plate Recognition System, X-Ray Baggage Inspection Systems, Door Frame / Hand Held Metal Detectors, IP Cameras etc. constitute the building blocks for the solutions. Systems engineered by ECIL protect vital and key installations and premises all around the country.



Mobile Gamma-ray based Container Scanning System

Servo Products & Inertial Navigation Systems

Synchros and Rate Gyros

ECIL manufactured Synchros are developed indigenously for Defence and Commercial Applications. Rate Gyros are miniature high precision electro-mechanical rate sensors. Used in Vijayantha & T-72 Tank and BMP- II Vehicles.



Synchro

Rate Gyro



Gyro Stabilised Horizontal Roll bar System

Gyro Stabilised Horizontal Roll Bar System (GSHB)

Gyro based landing aid for pilots of helicopters and planes on board ships to facilitate smooth landing in conditions of rough weather and poor visibility.

Solid State Cockpit Voice Recorder

Provides upto a maximum of 120 minutes of recording with optional Underwater Locator Beacon (ULB). Can directly replace existing tape based CVR. Facilitates fast downloading of Data.



Solid State Cockpit Voice Recorder



Actuator

Actuators for Unmanned Aerial Vehicles

Rotary type EM actuators for position control surfaces of drones and parachutes.



Control Local Power (Joystick)

Control Local Power (Joystick)

A Precision Electro Mechanical Sub-Assembly with controls for Azimuth and Elevation to position Gun Manually. Used for L-70 Guns.



Gimbal Payload Assembly

Gimbal Payload Assembly

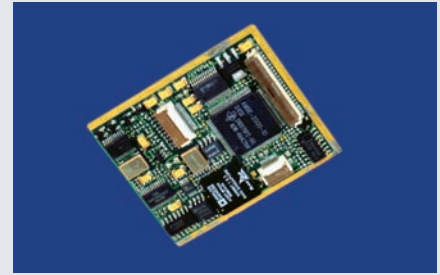
Servo Stabilised Platform for Electro Optic Payloads in UAV - NISHANT. GPA is controlled from Payload.

Encryption, IT & e Governance

Encryption Products

ABHAY - Encryption Card for Motorola Handset

Digital Encryption with indigenous proprietary algorithm.
Can fit in to GP328 / GP338 / GM338 models of Motorola. Automatic
Key selection based on PTT and New key for every PTT
Code and algorithm eraser command with password
New Algorithm download facility



ABHAY

MELIC – Voice, Data, Fax Encryption Unit

ITU -T V.32, V.32bis and V.34 (optional) Protocols.
Voice Coding as per ITU-T G.723 (ACELP) Protocol.
Secure Data Rates 2.4, 4.8, 9.6, 19.2 and 38.4Kbps.
Bypass / Secure Mode of communication for Fax.
Downloading of keys from Key Loader (HHKL)
Emergency key erase feature. Caller ID Facility



MELIC

GAUTAM – File Encryption Unit

Encryptor Connected to Serial / USB port
Decryptor connected to the Client terminal at the Hub.
Data rates up to 19.2 Kbps with Proprietary Algorithm
Key loading interface for downloading keys
Emergency key erase feature.
Password protection for unauthorized access



GAUTAM

ABHEDYA –E1 Bulk Encryption Unit

Point-to-point Full Duplex Synchronous operation.
Proprietary Algorithms developed by ECIL
Framed & Unframed E1 interface (G.703 / G732).
Fill gun interface is provided to load keys.
Key and algorithm erasure in case of emergency.
Built in Test Equipment diagnostics
Variable data rate from 64 Kbps up to 2.048 Mbps



ABHEDYA

IPCU – IP Encryption Unit- 10 / 100 Mbps Ethernet

Proprietary Algorithm & Key agreement Protocol
Non-linear stream cipher
Transport mode and Tunneling Mode of Operation
Emergency Key & Algorithm erasure
Key Loading through USB or RS232 Interface
Encryption at Layer-3 or Layer-2

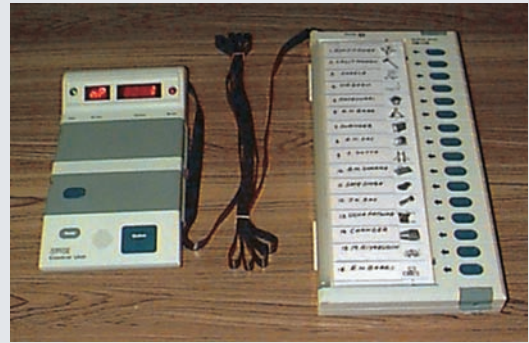


IPCU

Encryption, IT & e Governance

Electronic Voting Machine

ECIL's Electronic Voting Machines with their field proven simplicity, integrity and ruggedness have helped simplify the electoral process and strengthen democracy setting a benchmark around the world.



Electronic Voting Machine



Super Speciality Diagnostic Station

Medical Vans for Rural India

ECIL is in the fore front of crafting technology solutions to rural India. Medical Vans equipped with latest Digital X-ray and medical diagnostic equipments help bring expert medical advice to villages. The Van is connected to the hospitals through Satellite Communication for Voice, Video and Data.

Single Phase Energy Meters

ECIL has been producing Single Phase Static Meter (AMR) Model EM 5868 (5-100A). It is GSM based AMR with multi-tariff, import-export, post-paid / pre-paid meter and is an integrated solution for all metering applications for loads upto 100A.



Energy Meter



Kiosks for
Farmer Information System

Kiosk for Farmer Information System

ECIL has carried the benefits of IT to the door-steps of farming community by installing kiosk based Farmer Information Systems in several Agricultural Market Yards linking all of them to a common data centre for sharing prices, arrivals, etc. and also to educate farmers on farming technology.

Total IT Solutions

ECIL has been designing and delivering total IT solutions for complex and large projects around the country. These involve supply of IT hardware, system software, LAN / WAN networking and implementation of application software. Some of the projects are in 'Build-Own-Operate-Transfer' or PPP models.

Electronics Corporation of India Limited

A Government of India (Department of Atomic Energy) Enterprise

Corporate Business Development Group

Post ECIL, Hyderabad - 500 062

Web: www.ecil.co.in e-Mail: cbd@ecil.co.in

Telefax: +91 40 27120671