Integra Egypt

Company Profile and Overview

Founded 2014

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About us

Who we are?

- Integra is an industry leader in delivering innovative solutions to Construction Turn key Job projects & a leverage mobile network assets to preserve and grow revenue from enhanced services.
- Integra has remained one of Egypt’s mobile contractor leaders by delivering creative solutions offering absolute convenience and unmatched value for our customers.

What is our strategy?

- Offer robust, creative, & end-to-end solutions that deliver absolute convenience and unmatched value, securing customer acquisition and retention with faster time-to-market for new service revenues.
- Create solutions that can be easily implemented in the operator’s existing infrastructure.

How is it achieved?

- Integra's unique suite of solutions & services are designed to assist operators wanting to take advantage of the latest technologies by providing faster time-to-market for new services and seamless convergence between current and future technologies.
- Our expertise allows us to design and deliver sophisticated, integrated solutions for our partner client.

Integra in a nutshell

History & DNA

- Founded in 2014. Heritage of network and telecommunication services, General Contracting Turn key job .
- First project completed in 2014
- Privately held entity. Office in Cairo (Headquarters).
- 200 employees

Service Lines

- Acquisition
- General Contracting -Turn Key Job
- Telecommunications services
- Power & control
- Surveys
- FTTH &FTTX
- CCTV

Sector coverage

- Mobile industry
- Oil & gas
- Security & Defence
- Government
- Real Estate Developers.
- Banks.

Sister companies

- Telco Pro (RF solutions)
- UP Link (TX solutions)

Solution & Technology

- BTS
- Microwave
- RAN solutions
- IP Microwave – IP RAN traffic nodes & high capacity
- Internet & data
- Rollout solutions
- Radio enhancement
- Batteries and back up systems
- Solar Energy
- Power panels
- Ac (single or three phased)

Clients & Credentials

- Telecommunication Clients include Vodafone Egypt, Etisalat Misr, Nokia Egypt. Telecom Egypt, Ericsson Egypt
- Class A contractor.
- General Contracting clients include Soma bay, ABE, Ministry of youth & Sports, M square, IGI.

Strategic Alliance

- Ericsson enterprise solutions.
- Ibsen Telecom (LIFI solutions)
- Comlab (indoor rail solutions)
- Accuver (Drive test and post processing solutions)
- QOWISCO CCTV solutions.

Summary

A leading General Contractor turn key job in Construction & mobile specialised in various offerings within the Construction & telecommunications space with goals to become one of the biggest Construction companies & a mature provider for enhancing mobile operator's networks with a growing customer base and enhancing customer experience.

What is our formula of success?

Since our launch in 2014 (as Integrated General Contracting & Telecom Solutions), Integra has offered an unparalleled suite of value-priced for constructing projects & mobile solutions for Egypt's marketplace that help clients to increase revenue, boost network traffic, enhance customer loyalty, attract and retain high-value customers.

Our Telecom Capabilities

What are our capabilities in Telecom?

	Equipment Handling	Site Surveys	Site Preparation	Site Installation	Commissioning	Expansions & Upgrades	Dismantling	Packaging
BTS	✓	✓	✓	✓	✓	✓	✓	✓
Microwave	✓	✓	✓	✓	✓	✓	✓	✓

We provide a fully integrated suite of telecommunications services

Service summary

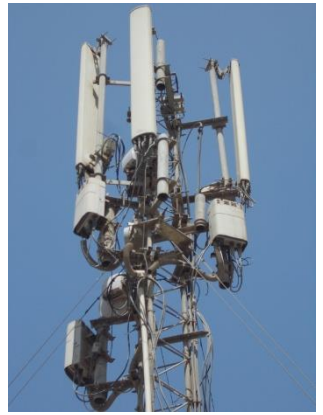
BTS service offerings:

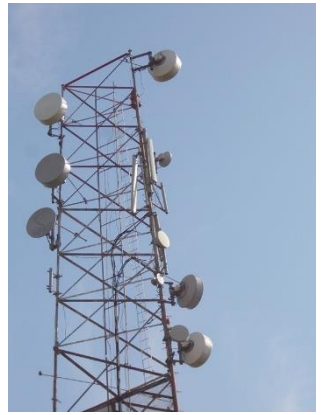
- Installation and commissioning
- Integration and expansion
- Inspection, configuration, and testing
- TRU & CDU expansion
- Cabinet packaging, cleaning, treatment, & dismantling.

Microwave service offerings:

- MW links
  - Installation & commissioning
  - Integration & upgrades
  - Dismantling
  - Expansions

Telecom installations sample


Telecom activities

A- New Rollout sites

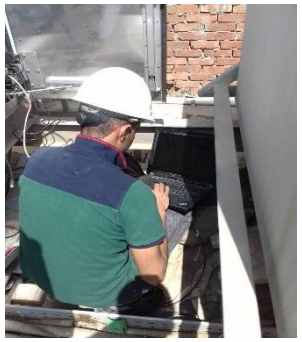
- Our telecom teams were able to Install & commission more than 400 sites for our customers with a lot of different technologies such as 2G, Cosites, 3G, UMTS 900, LTE etc…
- Provide ideal solutions to achieve our goals,
- Utilize our experience to add value to our project,
- Deliver a value product up to client expectations with ultimate quality and least running cost,
- Timely deliver as per scope and requirements,
- Safe and clean environment,
- Ethically cooperate to the best of your Interest,

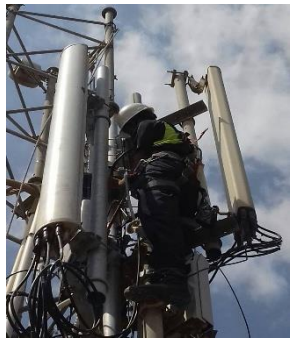
Telecom activities

B- special projects & upgrades

We provide high quality and cost-effective services for telecommunication sector in Egypt.
We offer diversified services for Macro/Micro sites including:

- Site Enhancement (Radio/Transmission).
- 2nd Carrier Expansion .
- 2G/3G Expansion & Upgrade .
- Site Sharing.
- Site Modernization.
- SIAE Management.
- Legacy sites.
- Power Cube Deployment.





Project	3G EXP	2G EXP	New Logical 3G	New Logical CO	Modernization	New Sector	Micro Sites	UMTS900	Survey

Project	IP RAN	Baseband Upgrade/Addition	Additional Power Cabinet Installation	Batteries & Rectifiers Addition	Remote SW Capacity Expansion	Site Rearrange & reallocation	Dismantling

Telecom activities

B- special projects & upgrades

General scope of work incudes equipment delivery to the site including E2E logistics and transportations.
Installation and fixation of the BTSs/ baseband units including all power cables, earth Cables, transmission cables, etc.
Complete installation of the RRUs including all fiber cables, power cables, earth cables, jumpers also installation and connection of transmission cables (traffic cables, E1s, Ethernet cables etc.).
Installation and fixation of power cabinets, install and connect related cables and loads (power cables, grounding cables and Jumpers, etc.).
Power up the BTSs and power cabinets, configure the BTSs and power cabinets, load site S/W, define related Internal and external alarms.
Contact NOC and integration teams to load related S/W.
Clear any sites alarms whenever raised.
Perform the needed testing procedures to assure proper installation, integration and hardware functionality.
Prepare acceptance documents and perform acceptance visits .

Telecom activities

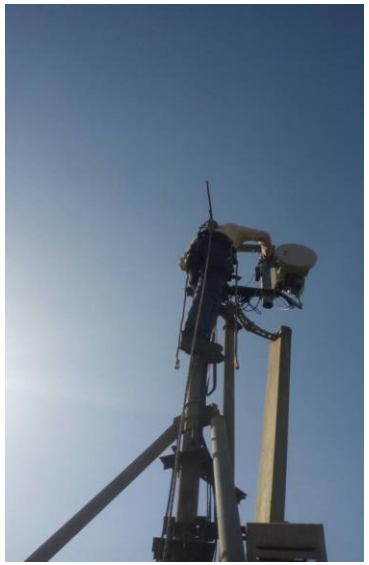
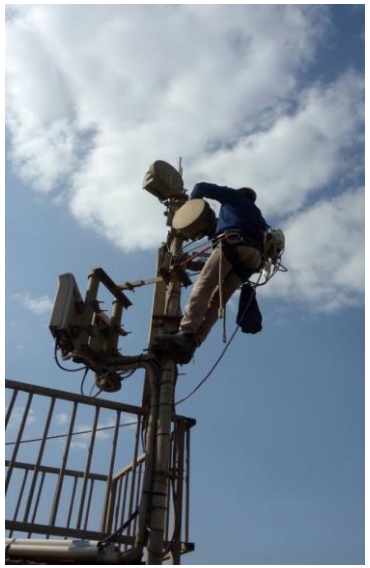
C- Transmission

Our teams are able to Install, Swap & Configure all types of Microwave links for different vendors according to operator standard also our teams are able to Dismantle & Backing all Microwave links to WH according to operator standard as per illustrated below

Different TX scopes done by our teams
Additional Cards & Modules OR IDU Upgrade
Additional Power Cabinet Installation & Batteries Strings
Dismantle & Return Microwave Link
IF Cables Installation (Upon Request)
IP RAN Migration after TX Cutover
Link Upgrade from 1+0 to 1+1
MW Link (1+0) , (1+1) , (2+0)
MW Link (1+1) SD OR (2+2) SD
MW Link E-Band (1+0) OR (2+0)
MW Link XPIC (2+0),(2+2), (4+0)
Packaging (box, bubble wrap, etc.)
Remote SW Capacity Expansion
S&I of 50,70,90 mm2 HDG Wire
S&I of Antenna/MW Dish Bracket
S&I of Galvanized Earth Bar 40x100x6
Site Rearrangement in Separate Visits
Site Survey
STM-1 Connections/GE Protection
TX Cabinet Installation
TX Cutover
Total Tasks

Links alignment and commissioning done by our teams




What are our telecommunications capabilities?

D- Operation & maintenance

- **Operation & Maintenance**
  - Site Modification (Relocation & Redesign)
  - Masts & Towers Repair & Maintenance.
  - Shelters & Canopies.
  - Generators & Rectifiers.
  - Air-condition, Electrical & Grounding Systems

What are our civil services in telecom?

	Modernization	Swap	2ND/3rd carrier	Radio enhancement	Survey Reports	UMTS	LTE
Special Projects	✓	✓	✓	✓	✓	✓	✓

	Acquisitions	Contracts	Permits	Construction	Installation	Commission
Rollout Projects	✓	✓	✓	✓	✓	✓

We provide fully integrated civil services

Service summary

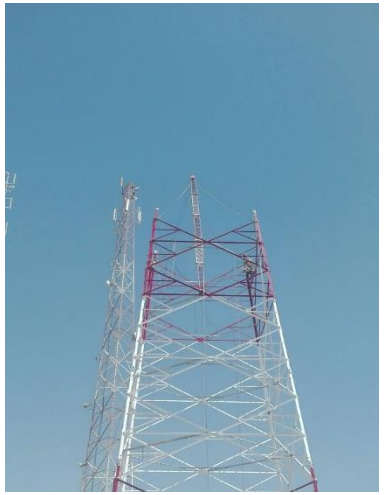
Special project offerings:

- Modernization
  - In-In
  - In-out
  - Out-out
- Swap projects
- Telecom Preparation 2nd & 3rd Carrier
- Radio Enhancement Project
- Survey Reports, STA & executing new ACR by adding sector or change type of Site.

Rollout project offerings:

- Acquisition
- Leasing
- Permettions
- Construction

80 meter greenfield constructed by our teams



Acquisition

New rollout Acquisition

Our capabilities & history:

- Our Acquisition teams were able to Acquire more than 500 locations for our customers to leverage mobile network assets to preserve and grow revenue from enhanced services.

Legalization

Permitting

Our legalization teams were able to legalize 100+ sites for our customers for sites that were built with RA.

UPP – Utility power project

Our legalization teams were able to connect commercial power to 100+ BTS stations for our customers all over Egypt.

Power meters

Our legalization teams were able to avail 10+ power meters for BTS stations for our customers all over Egypt.

Civil services Related to Telecom

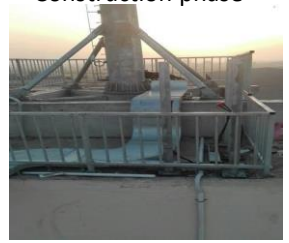
A- New rollout

Our capabilities & history:

- Our constructions teams were able to build more than 500 sites for our customers to leverage mobile network assets to preserve and grow revenue from enhanced services with different types of structures such as Green fields, stub towers, Monopoles, palm trees & camouflaged solutions.

Construction phase

Construction phase



Palm tree cone assembly

Water tank construction

Advertising board

B- Operation & maintenance

- Preventive maintenance 700+ sites
- Corrective maintenance 400+ sites

Before

After

After

After

After

After

Before

Before

Before

Before

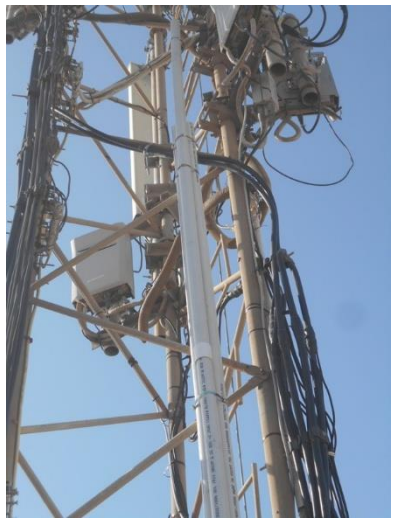
Civil services Related to Telecom

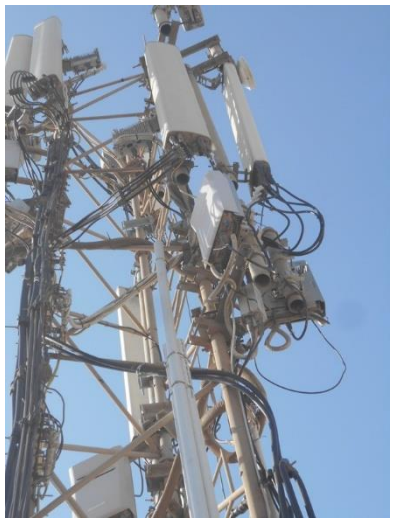
C- Upgrades & Special projects

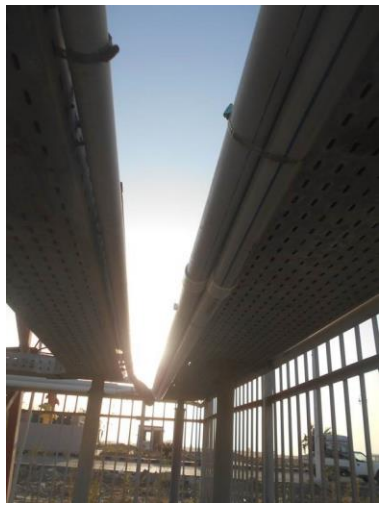
Our capabilities & history:

- Our constructions teams were able to execute 2000+ activities for our customers to deliver absolute convenience and unmatched value, securing customer acquisition and retention with faster time-to-market for new service revenues

Project
3rd carrier
LTE
3G Modernization
co-site
Tilt
Change Ret unit
STBA
4th sector
retrofitting
New tower (Re allocation)
Add & swapping antenna
IBS action
Sectorization action
Dismantle
Re -height Antennas
Power Action
3G







Construction Turn Key Services

B- MEP building solutions

- Excessive know how and experience in MEP building solution and huge indoors as we executed more than 90 MEP space for our customers that mature enterprise-scale commercial product & services for large clients with widely adopted solutions and Executive high end quality of finishes.

Samples of MEP executed by our teams




Samples of indoors executed by our teams




Power & Control

What are our power & control capabilities?

	DC	Rectifiers	Batteries	Backup	Power panels	ATS solutions	Advanced control	Design & Installation
Power & control	✓	✓	✓	✓	✓	✓	✓	✓

We provide fully integrated power/hybrid services

Service summary

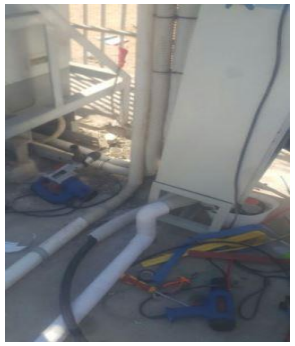
Power & control service offerings:

- DC & Rectifier solutions
- Batteries & Back up system
- Solar energy solutions
- AC (3 phase & single phase)
- Power panels
- ATS solutions
- Advanced control solutions
- Other services:
  - Installation
  - Maintenance

Power & control Capabilities

ATS installation by our teams



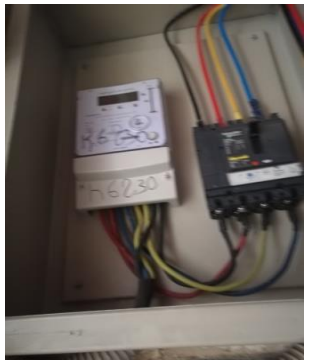
Power sharing




Generators installation by our teams




Power meter connection to our sites

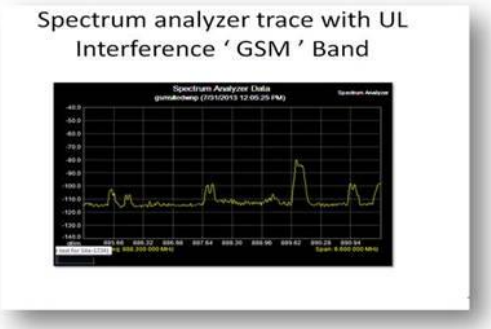



RF, optimization & drive test services

Power & control services

Optimization

- 2G/ 3G/ LTE Optimization Resources are available with different level of experience up to 10 years.
- All resources have diversity of experience on Ericsson, Huawei, ALU and NSN products portfolio.
- Complete set of RF planning services is available upon Customer Request includes
- Dimensioning.
- Nominal Plan.
- Prediction.
- Site Survey & Site Selection.
- Frequency Planning.
- Neighbors Planning & Creations



Drive test

- 2G/ 3G/ LTE Single Site Verification.
- 2G/ 3G Voice Benchmarking.
- 2G/ 3G/ LTE-FDD/ LTE-TDD Data Benchmarking.
- 2G/ 3G MOS/PESQ/POLQA Benchmarking.
- Verifying Coverage and Quality of the Mobile System.
- Diagnose all RF related problems such as “Interference, Drop calls, HO failure,
- Missing Neighbors, Cross Feeder etc.”.
- Health check for Network Nodes after Major Changes “SW & HW upgrades,
- LAC Splitting and Parameter Changes”.
- Special Drive Test to Faulty Sites like “Cross Feeders, High Drop Call Rates , Fault
- TRU Check”.
- Handling all Tests of CS Fallback, LTE-DL, LTE-UP, HSPA, HSPA+, DC-HSPA.
- Special Customer Complaint Testing.
- Perfect Dealing with TEMS Automatic.

Post processing

- Dive Testing Sets of Reporting for Cluster Optimization.
- Field analysis, log file analysis, report problems and recommend solutions for the mentioned project.
- Single Site Verification Analysis and Acceptance.
- 2G/ 3G/ LTE Benchmarking and Preparing a Ranking Reports.
- MOS/ PESQ/ POLQA Benchmarking Reporting.
- Handing All Customer Experience PS Tests “FTP, UDP, HTTP, Web Browsing, Streaming and Ping”
- Handling all Indoor Tests and Customer Complaints Analysis

What are Integra's wide range of solutions, products, & services?

INTEGRA

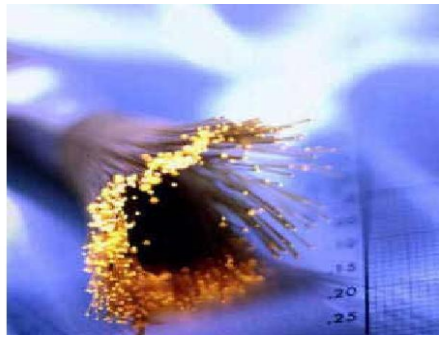
- Fiber Optic solutions
- FTTx technologies
- Integrated Network solutions
- Data center solutions
- Manage unified communications
- Wireless broadband & infrastructure solutions
- Wiring solutions
- Outside plant copper cabling solutions
- Test Solutions/Security & Lighting
- Data Center Solutions and Cabling Products

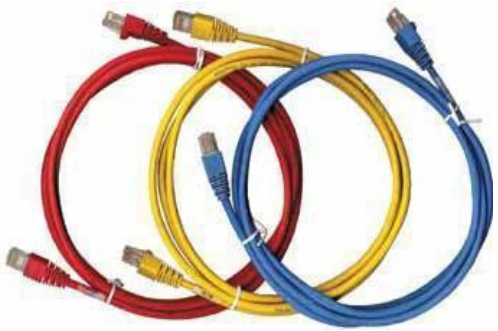
The better the question. The better the answer.
The better the world works.

EY
Building a better working world

Integra is focused on highly customized communication network products, solutions and services that meet and exceed customer expectations.

INTEGRA

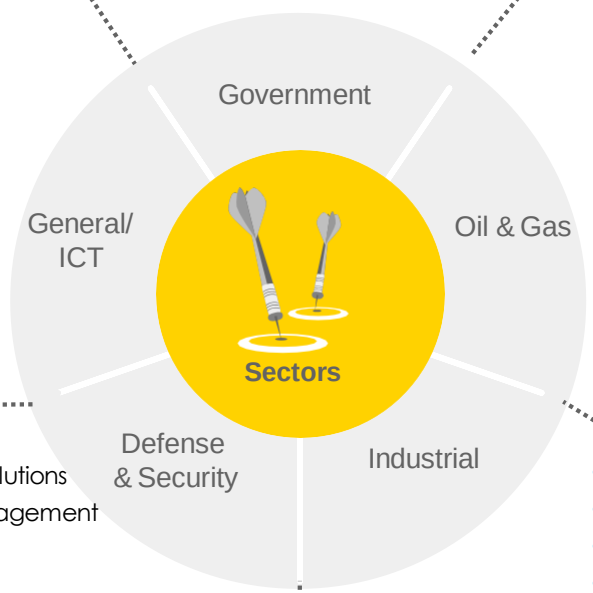




Integra has been providing corporations, industries and governmental organizations with communication network solutions, products and services

- Fiber optic solutions
- FTTx
- Integrated networks solutions
- Data Center solutions
- Cabling products
- Managed unified communications

- Wireless broadband solutions
- Outside plant copper cabling accessories
- Security & lighting management systems



- Fiber optic solutions
- FTTx
- Integrated networks solutions
- Data Center solutions
- Cabling products
- Managed unified communications
- Wireless broadband solutions

- Telecom infrastructure solutions
- Outside plant copper cabling accessories
- Test & measurement solutions
- Security & lighting management systems

- Wiring systems
- Fiber optic solutions
- Integrated networks solutions
- Cabling products
- Managed unified communications
- Outside plant copper cabling accessories

- Test & measurement solutions
- Security & lighting management systems
- NDT / RVI

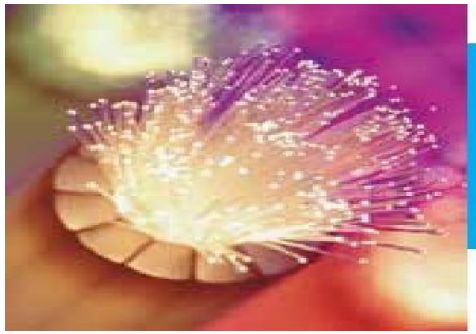
- At Fiber optic solutions
- Integrated networks solutions
- Data Center solutions
- Cabling products
- Managed unified communications
- Wireless broadband solutions
- Outside plant copper cabling accessories
- Test & measurement solutions

- Security & lighting management systems
- NDT / RVI

Fiber Optic Networks

Integra designs, installs and commissions high quality cost-effective fiber optic solutions. Acclaimed for solid, reliable and innovative products, we deliver customizable solutions geared to perform even in harsh and demanding operating environments.

We use single-mode (SM) fibers in applications where low signal loss and high data rates are required, such as on long spans where the repeater/amplifier spacing needs to be maximized. On the other hand, we use multimode (MM) fiber for shorter distance applications. As MM fiber is more economical because it can be used with inexpensive connectors and LED transmitters, it is the ideal choice for short distance, lower bandwidth applications.



Fiber Optic Network Installation, Testing and Termination

To satisfy diverse customer requirements, Integra provides fiber optic cables in numerous configurations and lengths. We deliver complete fiber optic networks; cables are complemented by coordinated termination and distribution elements.

2. FTTx Technologies

FTTx is a generic term that describes any network architecture where optical fiber is used in order to replace all or part of the usual copper local loop employed in communication systems. It is geared to deliver multiple advanced services, such as voice, data & video across one link (triple play) all the way to homes or businesses.

In today's market, there are essentially four FTTxtechnological options:

Fiber to the Home (FTTH)

A fiber-optic communications path that extends from the operator's switching equipment to at least the boundary of the home living space or business office space.

Fiber to the Building (FTTB)

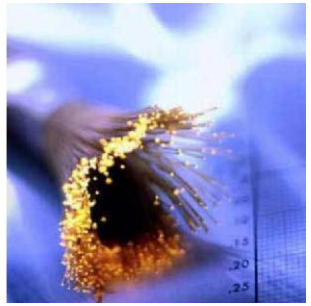
A fiber-optic communications path that extends from the operator's switching equipment to at least the boundary of the private property enclosing the homes or business. In this architecture, the optical fiber terminates before reaching the home living space or business office space. The access path continues then over another access medium – such as copper or wireless – to the subscriber.

Fiber to the Node/Neighborhood (FTTN)

Generally, it refers to a system where fiber is extended to a point – typically a street-side or a cabinet within an average of 1000 to 5000 feet from the user terminal. From there, copper or wireless serves the user. Typically, the service is ensured through a variant of DSL (Digital Subscriber Line).

Fiber to the Curb (FTTC)

This option is similar with FTTN, except that the fiber is brought much closer to the user premises – typically closer than 1,000 feet and often closer than 300 feet. In addition to DSL, FTTC installations may use Ethernet (over copper cable or wireless) to bring the signal from the fiber termination point to the user.



FTTH and FTTB Network Architectures

Optical networks are categorized into passive optical networks (PON) and active optical networks (AON), involving several technical variants within each type.

PON

In this type of network, there are no active, electrical, devices between the central office and the end user. All the handling of the light beams carrying the signal is done with mirrors, prisms and fibers.

AON

In this type of network, there are electrical devices (routers and switches) between the user and the central office. More recently, active networks have been designated as "point-to-point" (P2P) networks. This is due to the fact that each end user gets a dedicated fiber (or several dedicated fibers) extending from the Central Office.

Basic Features of Integra FTTH Solution:

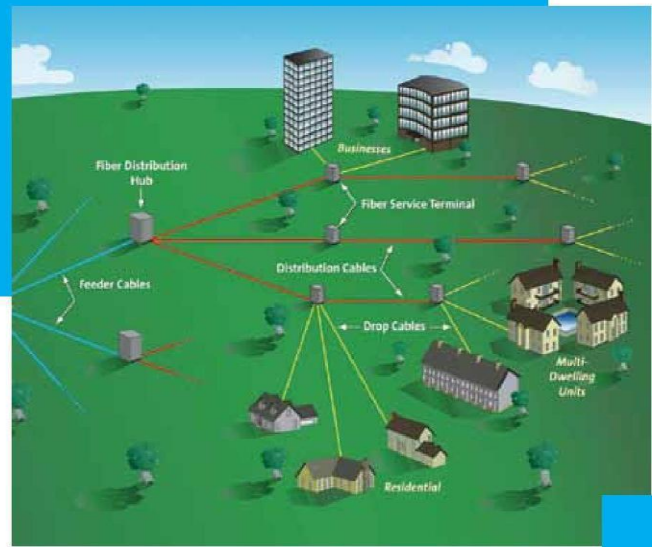
- Neutral - access shared by all service providers
- Scalable -without bandwidth limitation for the future
- Transparent-supportive of final services currently provided by operators
- Open - because of the common IP standards
- Attractive-due to ensuing benefits and cost facilities

Integra FTTH Solution Advantages

FTTH is now widely recognized as the optimal solution for providing broadband Internet connection to new & existing

Integra end-to-end total involves the following advantages:

- Site survey
- Design
- Civil work
- Implementation
- Testing and commissioning
- Content (voice, data & video)
- Services &post sales support
  - Network registration
  - Periodic reporting



3. INTEGRATED NETWORK SOLUTIONS

Integra adopts a structured, customer–centric, business approach to addressing your network infrastructure needs on both passive and active levels, thus delivering a complete networking solution. We support our customers by providing conceptual design, implementation, integration and management of highly efficient platforms and communication technologies.

Our Integrated Network Solutions evolve around the following areas:

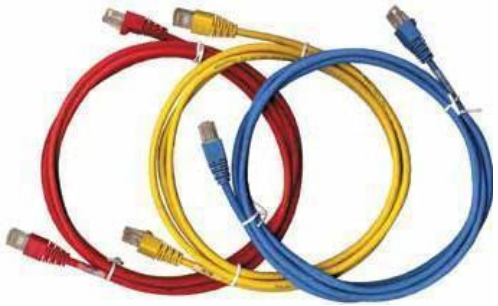
- Structured Cabling & Passive LAN Solutions
- Active Networks

Integra Structured Cabling & Passive LAN Solutions

Structured cabling systems (SCS) are the backbone of all voice & data technologies selected to meet customer communications requirements; they are geared to integrate voice, data, video, and building management systems, such as safety alarms and security access.

Integra SCS consist of an open architecture, standardized media and layout, standard connection interfaces, and total system design and installation. Integra solutions adhere to national and international standards. Integra SCS are a complete, organized arrangement of high quality cables and associated hardware. We provide customers with a comprehensive telecommunication infrastructure able to distribute services throughout the building, providing reliable voice and data communications for business applications.

We deliver an all-inclusive range of cables, accessories and components, ensuring complete solution design and installation.



LAN Design & Installation

Acknowledged for its 20-year long experience, Integra delivers complete, and highly customized LAN solutions, from initial technical consultation to implementation, final testing and commissioning. We use the latest in testing equipment to make available to our customers a network installation that works efficiently the first time and every time.

In addition, we provide customers with outstanding post-sales service, assigning our technical specialists who are renowned for the most effective Troubleshooting.

Comprehensively addressing customer needs, we deliver the following services:

- Technical consulting
- Site survey and LAN design
- LAN installation, testing for copper and fiber optic solutions, and the related fieldwork
- Post sales support & service
- Certification of network cabling systems to current EIA/TIA standards
- ISO certified procedures
- 25-year warranty in most of our solutions

Integra LAN solutions ensure for you

- risk minimization
- professional implementation
- in-breadth and in-depth technical expertise
- timely delivery
- competitive pricing

Active Networks

We provide our customers with state-of-the-art, active network components, involving modular, managed and unmanaged switches, VoIP solution, network security VPN firewalls, as well as wireless local area network (WLAN) technologies.

Our innovative solutions comprehensively address the needs of home and business networking, while at the same time satisfying the requirements of Broadband providers. In addition, we offer onsite surveys, consultation, implementation, and post Sales support.

More specifically, our solutions evolve around the following axes:

- ADSL products, involving customer premises equipment (CPEs), ADSL modems, and wired & wireless routers
- VoIP products, involving PBX IP telephony, VoIP gateways, and IP phones
- Modular, managed, semi-managed and unmanaged, switches
- Wireless solutions, and adaptive WLAN products

Switches and Routers

Integra delivers LAN switches that enhance your network and help you:

- Integrate security to protect against, mitigate, and recover from network attacks
- Ensure network availability to maximize uptime
- Get steady support for real-time applications
- Simplify the management and facilitate the network configuration and troubleshooting
- Optimize application performance and get high-performance connectivity for voice and data communications
- Select among a wide range of models (including stackable, standalone, and modular) and technologies (10 Gigabit Ethernet, application acceleration, and firewall or IDS - intrusion detection system)

LogN Mobility Solutions Portfolio

For consumers, we deliver mobility products that help users conduct business anytime anywhere. According to customer specific needs, we design, install and service complete wireless networks for homes and businesses. Our portfolio comprises of modem routers, wireless gateways and access points, as well as Ethernet switches.

4. Data Center Solutions and Cabling Products

Data Center Solutions

Information Technology is nowadays of primary importance to core business processes; this is the reason for which Data Centers play a critical role in the overall success of companies and organizations. The main purpose of a Data Center is to run all the applications that handle a company's core business and operational data. A Data Center may be concerned with just operations architecture or it may provide other services as well, notably off site backup and disaster recovery.

Data Centers must therefore demonstrate operational excellence in terms of system availability, asset utilization, security, and power/cooling efficiency. Furthermore, Data Centers must also support new, extrinsic necessities, including business-to-business relationships, related regulatory requirements, and a global operating environment. Last but not least, Data Centers must be able to adapt quickly and effortlessly to inevitable change.

To comprehensively meet the incessantly increasing customer needs, Integra Data Center Solutions evolve around following axes:

- **Data Center Consulting**
- **Data Center Design & Engineering**
- **Data Center Project Management**
- **Data Center Construction**
- **Data Center Infrastructure**
- **Data Center Monitoring & Control**
- **Data Center Operations & Maintenance**

Empowered with strong global partnerships, we deliver a wide range of project expertise in storage area networks (SANs). The ensuing result is a permanently available, greatly scalable, fully redundant, easily manageable and maintainable, fault-tolerant Data Center environment.

In today's highly competitive markets where customers measure network downtime in lost profits, our project design, implementation, commissioning, and maintenance ensure the following mission critical parameters:

- Data Center efficiency
- Business continuance (instantaneous access to data from multiple tiers)
- Data Center security (data protected when at rest, and while transported)
- Virtualization (ability to provision the storage infrastructure)
- Infrastructure consolidation (highly scalable, intelligent SAN platforms)
- Data mobility (seamless, non-disruptive migration strategy)

Our solutions for Data Centers help customers monitor their active systems, improve resiliency, increase business responsiveness, and reduce overall power consumption.

Cabling Products

As a leading local and regional manufacturer of high performance cables and related accessories, we engineer, design and manufacture our copper and fiber cabling products, based on scientific measures.
Our design concept took several years in the making, and our manufacturing experience incorporated our 20-year long expertise in assembly. Our cables are critically tuned to assure peak performance, regardless of length or application. Satisfied customers, high-performance, stock availability, and 25-year warranty are our mainstay. We are dedicated to providing our customers with premium and value added products at reasonable prices.

Our comprehensive range of cables encompass following:

- Copper cables
- Fiber optic cables
- Data cables
- Control cables
- Microwave cables

Components of Integra Cabling

In addition to the aforementioned cables, we deliver a complete range of cabling components, involving fiber optic assemblies, fiber optic accessories, equipment related to internal and external cable management, preparation tools and test equipment, as well as additional network components, such as couplers, splitters, media converters, WDM and CWDM.

Electronic Enclosures
Our robust design and attractive styling combines strength and appearance, making Integra enclosures ideal for office environments, data networking, broadcast, security and audio visual applications. We deliver 19" both, wall cabinets and floor standing, electronic enclosures and all their accessories.

5. Managed unified communications

Managed Unified communications

Managed unified communications and IP telephony are changing the way organizations communicate. For network managers, IP telephony enables a single, secure communications system that is manageable, flexible, versatile, feature-rich and cost-effective. The solution involves a single, centrally managed VoIP router and security.

Managed unified communications (MUC) help create adaptive workspaces. MUC combine all forms of business communications into a single, unified system that provides powerful new ways to perform and collaborate. This is marketed as Business Connect bundles.

Business Connect Bundles

Business Connect bundles consist of the following components:

- Cisco IP telephony (call manager express + IP phones)
- Dedicated Internet connectivity (IP transit line whereby the speed is the same when either uploading or downloading)
- Integrated security
- Integrated service network router (delivering voice, data & Internet access)
- 24/7 support, involving Internet connectivity, integrated service network router, Cisco IP telephony, and the complete system integration

Business Connect provides the necessary tools to interconnect customer network segments and create inter-working systems for your employees, either they are in office or telecommute; at the same time, Business Connect shields companies and organizations from the complexities of connectivity and IT daily operation and troubleshooting.

More specifically, Business Connect bundles give companies the ability to:

- Collaborate across any workspace
- Accelerate decision making
- Innovate across the value chain
- Integrate with other industry-leading applications
- Ensure network security

The Parts of Business Connect

The Business Connect bundles are offered for the Cisco 1861, 2800, and 3800 Series routers; they consist of the following parts:

1. Integrated Services Router (ISR)
2. Cisco IOS® software-based routing which includes the following features:
   a. Routing and Security
   b. Cisco Unified Communications
   c. Call Manager Express (CME) for call processing
   d. Cisco Unity® Express for voicemail and auto attendant features
   e. Cisco Unified Border Element (CUBE) for Session Initiation Protocol (SIP) trunk
   f. Cisco Unified Call Connector Personal Edition for Microsoft Windows desktop integration
2. Cisco Unity® Express hardware module and licenses for voicemail, integrated messaging, and interactive voice response
3. Digital signal processors (DSPs) for conferencing and connecting to a public switched telephone network (PSTN)
4. Phone licenses to deploy Cisco IP phones

Furthermore, Business Connect bundles also include security features like VPN, Cisco Intrusion Detection System, and Cisco IOS Firewall, in addition to all the components of the voice-only bundles.

Business Benefits of Managed Unified Communications

Managed unified communications help businesses, either small or large, to streamline information delivery and ensure ease of use.

Human delays are also minimized or eliminated, resulting in better, faster interaction and service-delivery for the customer, and cost savings for the business.

Managed unified communications also allow for easier, more direct collaboration between co-workers and with suppliers and clients, even if they are not physically on the same site.

This enables companies make significant reductions in business travel, especially with multi-party video communications, thus reducing an organization's carbon footprint.

Integra Managed Network Services (MNS)

Integra MNS provides the necessary 24/7 remote technical support for the Business Connect bundles through its NOC (network operations center), a high-tech monitoring center equipped with cutting edge hardware and software tools.

Integra NOC is managed by dedicated support engineers and is designed to monitor, identify and troubleshoot network malfunctions, irregularities or breakdowns.

More specifically, through our NOC, we are able to:

- Verify that your network is secure and efficient
- Deliver dashboard visibility into network performance
- Provide information to better manage and improve your network
- Reduce the time and effort necessary to keep your network running optimally and
- Foresee potential problems before they impact your business.

6. Wireless Broadband & Infrastructure Solutions

Wireless Broadband Solutions

Wireless broadband is a telecommunications technology that provides wireless transmission of data, through use of different transmission modes, from point-to-multipoint links to portable and fully mobile internet access. Amongst others, it provides triple play (voice / video / data) services with great downloadingrates.

The bandwidth and the range of the wireless broadband technology make it suitable for the following potential applications:

- Connecting Wi-Fi hotspots to the Internet
- Providing a wireless alternative to cable and DSL for "last mile" broadband access
- Providing data and telecommunications services
- Providing a source of Internet connectivity as part of a business continuity plan (To offer an example, if a business has a fixed and a wireless Internet connection, especially from unrelated providers, they are unlikely tobe affected by the same service outage.)
- Providing portable connectivity
- Wireless WAN / LAN applications
- Homeland security
- Enterprise / campus network extension
- IP Video surveillance systems

Telecom Infrastructure Solutions

We provide antenna solutions for multiple wireless applications, including mobile radio, broadband wireless access, in-building wireless, GPS, and satellite communications.

Our antenna design utilizes the latest technology and high quality materials to build antennas that provide the superior performance and reliability expected by our customers, in addition to the maximum durability under severe operating conditions.

Base Station Antenna Solution (BSAS)

Our antenna solution covers frequencies from 800MHz to 2500MHz. Geared to meet the toughest application and functional operation requirements, it covers narrowband, broadband and multi-band models. Through extensive testing, simulation and optimization, our base station antenna guarantees excellent mechanical and electrical performance.

BSAS Design Philosophy

- Use of state-of-the-art simulation tools, e.g. IE3d, HFSS, and own Microwave CAD software
- Improved design efficiency and speed of the antenna, radiation/circuits parameters analysis, optimization and integration

BSAS Key Elements

- Feeder Network: air dielectric, RF cables, microstrip
- Radiation Element: dipoles, microstrip, patch
- Boundary Condition: backplane layout, coupling components

BSAS Key Features

- Modern design concept
- Strong tooling capacity and high technological level based on air dielectric microstrip feeding structure
- Advanced beam-forming technology such as null-fill, upper side-lobe suppression and electrical downtilt functions
- Thorough test conditions; various environmental tests involving high/low temperature, air tightness, humidity, salt mist and rain shower guarantee that the antenna functions under the most demanding environmental conditions.
- High reliability and durability

7. Wiring Systems

Wiring Systems

Integra has manufactured lightweight harness assemblies since 1987. Acknowledged as a regional leader in heat shrink technology, we supply complete systems, from intelligent product design to turnkey manufacturing and assembly. Backed by our technical expertise and our state-of-the-art manufacturing facility, we are able to produce and deliver light weight harnesses that adhere to Raychem's code of practices.

Our wiring systems range from single open wire to full, environmentally-sealed, multi-branched assemblies using a wide range of components. Fully tested, our harnesses are provided with a 20-year warranty. Our harness components for the military, medical and industrial markets offer high reliability and proven performance.

Wiring System Components

Our comprehensive portfolio of harness components encompass the following:

Heat shrink tubing
We provide customers with thin wall & dual wall tubing that are UL (Underwriters Laboratories)/CSA (Canadian Standards Association) recognized.

Integra diesel-resistant, flame-retardant, dual wall with adhesive-lined ATUM, and high temperature tubing Viton are also designed to meet military standards.

Thin wall tubing
Thin-wall tubing provides superior insulation, strain relief, and protection against mechanical damage and abrasion.

Features include:

- Reliably consistent dimensions and physical properties
- Meeting MIL-I-23053 and MIL-R-46846 standards
- UL/CSA recognized

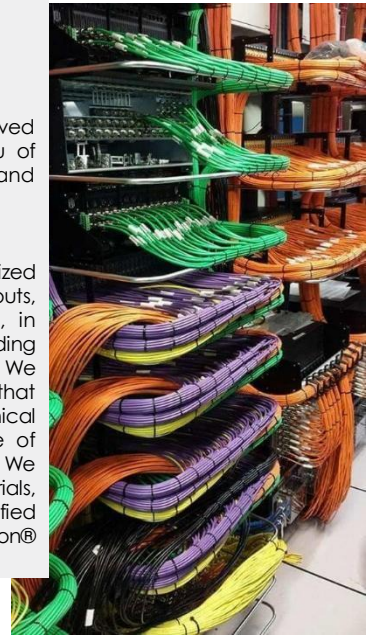
Dual wall tubing
When corrosion protection and sealing are required, Integra heat-shrinkable dual-wall tubing is highly recommended. During the specialized installation process, an adhesive lining melts and flows, creating a moisture-resistant, protective barrier.

Features include:

- Controlled amounts of adhesive, and consistent results
- Compliance with MIL-I-23053 standards
- UL/CSA recognized

Selected types of tubing are type-approved (thermoform tubing) by the American Bureau of Shipping (ABS), Det Norske Verities (DNV), and Lloyd's Registry of Shipping.

Molded parts
We manufacture and assemble customized molded parts, such as boots, cable breakouts, transitions, covers, caps, and feedthroughs, in many different configurations and sizes, leading the market in terms of mass customization. We produce heat-shrinkable molded parts that provide dependable strain relief and mechanical and electrical protection for a wide range of applications and environmental conditions. We provide molded parts in a variety of materials, such as semi-rigid and flexible polyolefin, modified elastomer, elastomer polymer blend, and Viton® polymer blend.



Wires
We provide customers with Spec 44 and Spec 55 wires that are renowned for their physical strength, and feature superior electrical characteristics; they are available as shielded, jacketed, and multiple component cables. Furthermore, our FlexLite wire and cable products offer cost-effective solutions for a wide range of commercial applications, from appliances and electronics to motors and electrical equipment.

Coaxial Cable Assemblies
The various types of grounding shields help minimize electrical and radio frequency interference; our coaxial cable assemblies are highly customizable in order to meet every customer requirement. Coaxial cables are the primary type of cables used for cable television, satellite television, and security cameras.

We deliver coaxial cable assembly solutions that are significantly less susceptible to interference than the standard coaxial cables; they therefore ensure an improved transmission efficiency. Our cable assemblies are composed of both, connectors and coaxial cables intertwined in order to enable a high level of solution customizing as per customer requirement.

Distribution Components
We provide customers with a wide range of interconnection and termination systems. Different cable types for virtually every application are complemented by coordinated termination and distribution elements.

8. Outside plant copper cabling solutions

Outside Plant Copper Cabling Solutions

Geared for fixed telecom outside plant (OSP) applications, our comprehensive portfolio of copper cabling solutions comprise of several types of products.

As one of the OSP's weakest links, the splice area is subject to extreme field conditions, such as water penetration, vapor, high/low temperatures, dirt, mechanical abuse, etc. To pertinently address the issue, we provide customers with the following:

1. Splice Closures

A. Heat Shrinkable Closures

Heat shrinkable closures are geared for copper networks, either primary or secondary, pressurized and non-pressurized. They are used (in buried, manhole, and handhole applications) as inline closures to protect and seal the splice areas of copper cables. They can be used on cut and uncut cables for straight and branch splices. Integra delivers heat shrinkable closures that bear witness to the most advanced techniques.

B. Mechanical Closures

-UCN inline closure for medium and high copper pairs

-UCNV inline vault closure to switch from outdoor to indoor cable

-UCA inline closure for low copper pairs

-BPR inline distribution closure for low copper pairs

C. Vault Closures

A special application of the mechanical closure is the vault closure, which is used in exchange offices for the connection of the trunk cable to distribution cables that are to be terminated on the MDF.

2. Splice Connectors

We make available a wide range of connectors to serve different requests and needs. The connectors are filled with high viscosity sealing compound that ensures protection of the connections, excellent insulation resistance, and good electrical Performance, even in extreme environmental conditions. Unfilled connectors are also available for internal plant applications. All connectors are crimped, using standard parallel action crimping pliers.

3. Copper Connection & Distribution Systems

A. Main Distribution Frames - MDF

MDFs are geared for copper networks housed in the central office or in equipment rooms. MDF is a frame whereby interconnections are made between the transmission network and the copper system. MDFs are used to terminate the copper cables running the site. The frame allows these cables to be cross connected to other equipment. Leading the market in terms of customization, we supply freestanding or wall mount set ups, integrated splitters, and blocks for xDSL applications. Our portfolio comprises a full range of products, including pre-connected solutions.

B. Distribution Boxes

C. Rocker Blocks

D. Cross-connection Cabinets for Voice and Data Applications

We deliver a complete line of sealed terminal blocks and modules based on insulation displacement technology (IDC). We deliver factory-tailed terminal blocks that best fit for cross-connect, building entrance, and distribution terminal applications.

E. Mini-Rocker

Among our latest additions, our state-of-the-art Mini-Rocker™ blocks or modules consist in a groundbreaking innovation.

4. Test Equipment for Copper Cables

We provide customers with test equipment for copper cables, involving probes, telephone test sets, continuity check testers, wire sorters, insulation breakdown testers, TDRs, and ADSL testers. The testing capabilities can be extended to online and real-time OSP testing.

Due to our OSP copper cabling solutions, telecoms are able to monitor and qualify their xDSL copper cabling, to test their DSL systems and measure their interference spectra, and to determine their quality of service, during IP-based transmission of voice, data and video (triple play), from an end user's perspective.

9. Test Solutions/Security & Lighting

Test & Measurement solutions

We provide customers with a wide range of test and measurement solutions, delivering a complete portfolio of rugged and reliable diagnostic test equipment and locating and marking products.
Dynatel products are recognized worldwide for functionality, ruggedness, versatility and ease of use.

Diagnostic testing equipment and cable locators provide the ability to quickly and accurately find the exact path and estimated depth of any type of cables whether metallic or plastic. Dynatel cable and fault locators also identify and measure points of cable damage. They include 3 watt transmitter, 3 in. inductive coupler, direct connect cable for Telco/CATV applications, and fault locating accessories.

For cable path locating, the Dynatel cable/pipe locator and faultfinder has a highly accurate multi-antenna design for various user-selected locating modes, such as directional peak, multi-directional null, plus an ultra-sensitive, special peak mode for extreme depths. In addition, our advanced locators offer the ability to locate active and passive electronic markers.

Diagnostic Testing Equipment

Diagnostic Testing Equipment is geared to provide the ability to quickly and accurately analyze and troubleshoot the local loop for customers, thus delivering enhanced customer services, such as fast Internet and data access, video on demand, and technologies such as ADSL2+, HDSL and SDSL.

Locating and Marking Products

We deliver market-leading products for accurate marking and locating of critical, buried network features. Due to the advanced RFID technology, the programming of feature identification into the markers is perfectly enabled. For this purpose, interfaces with GPS systems are made available to help for accurate mapping.

With Diagnostic Testing Equipment and Cable Locators, our customers can

- Locate cable and pipe path
- Measure cable/pipe or sonde depth
- Measure signal current in the cable or pipe
- Identify cable and cable pairs
- Tone shorts and grounds in aerial cable
- Locate energized power cable

Electronic Marker Systems (EMS)

Electronic marker systems (EMS) deliver more information to accelerate identification and help avoid costly mistakes. In fact, EMS are passive antennas with no internal power source to run down. EMS markers are not affected by overgrown vegetation or vandalism and can't be worn away by weather. As they are durable and passive markers, they can be buried over key facilities during construction or used to mark existing facilities during maintenance. Due to their high strength polyethylene shells, EMS markers are impervious to minerals, chemicals and temperature extremes.

Security & Lighting Management Systems (SLIM)

Integra Security & Lighting Management Systems (SLIM) is the ultimate in-building automation. It features an intelligent network of electronic devices that monitor, control, and integrate the lighting and security systems within a building. Flawlessly functioning as an integrated solution, Integra SLIM drastically reduces energy costs, provides total security, ensures ultimate comfort, and eventually minimizes maintenance costs.

According to the different building types (hotel, mall, museum, corporate premises, residential), our SLIM can be customized to the minimal detail for any application.

With Integra centrally operated SLIM, you can effectively and automatically regulate and control all related building resources, such as lighting, CCTV, and alarm & security systems; control can also be remotely effectuated through IP-based telephony, SMS or Internet.

Integra SLIM Solution

Access Control (conventional & biometric fingerprint)

An access control system determines who are allowed to enter or exit a building, as well as where and when they are allowed to. Electronic access control uses computers to solve the limitations of mechanical locks and keys. A wide range of credentials are demanded due to the replacement of the mechanical keys; subsequently, the electronic access control system grants access based on the credentials presented. When access is granted, the door is unlocked for a predetermined time, and the transaction is recorded. When access is refused, the door remains locked, and the attempted access is recorded as well. Access Control systems can be part of a global network or standalone; in addition, they can be linked to TCP / IP networks through wireless or PoE (power over Ethernet).

Intruder Alarm System

Integra intruder alarm system offers great benefits to home and business owners. It lets users know immediately whenever an intrusion takes place, and at the same time, it alarms the monitoring centre to dispatch security guards to re-secure the site under aggression. In addition, out of norm occurrences, e. g. irregular temperature rise, can also be detected by our system and treated as an alarm.

10. Data Center Solutions and Cabling Products

Non-Destructive Testing (NDT) & Remote Visual Inspection (RVI)

Integra offers customers a wide range of innovative nondestructive testing solutions that are used in various applications in the Oil & Gas, Industrial, Electricity and Transportation sectors. In addition to providing information on the quality of the products to be tested, NDT solutions help users identify potential problems beforehand, and thus ensure infrastructure operability and facility functionality.

NDT is accurate, reliable, and repeatable. Testing can be performed by transmitting ultrasound or inducing eddy current into a material from one side, making it unnecessary to cut or destroy parts.

A common application of NDT is the wall thickness measurement which applies in a wide variety of manufactured parts such as pipes & tanks. NDT is also essential for detecting any kind of imperfection, such as cracks or discontinuity.

NDT Applications

- Precision thickness measurement
- Corrosion thickness testing
- Weld inspection
- Flaw detection
- Bond testing
- Thickness measurement
- Material characterizations

Remote Visual Inspection (RVI)

Among the many nondestructive techniques available, the easiest to use and the most economical to adopt is RVI (remote visual inspection). This technique consists in the inspection of objects or areas usually inaccessible to the eye without disassembling surrounding structures or machinery. It allows inspectors to discover hidden defects, before they cause major problems. RVI makes it possible for specialists to inspect otherwise difficult to reach areas, such as inside turbine and piston engines, pipes, airframes, tanks, vessels and other voids, including behind walls and into air conditioning ducts. We supply reliable, economical inspection and maintenance systems, enhancing safety, security and productivity for our customers.

More specifically, we deliver the latest equipment, involving videoscopes, fiberscopes, and borescopes. The following list is indicative:

- Rigid borescopes
- Flexible fiberscopes
- Flexible videoscopes
- CCTV & image recording
- Light sources
- High speed video systems

Field Service

To ensure customer satisfaction and provide our clients with a single source for project implementation, service and post sales support, we have established a fully-fledged Service Department manned with high caliber trained team of engineers and technicians.

Our value-added services include initial technical consultation, site survey, solution design, internal project management, ISO-based procedure auditing, installation & weekly progress reports, testing & commissioning, and delivery of complete documentation (shop drawing, layout plans, patching schedules & test reports, etc.) as per customer requirements.

In addition to the aforementioned, we carry out key field service, notably fiber optic splicing, attenuation measurement (using OTDR), fiber optic network monitoring, and NDT/RVI testing for the Industrial, Transportation, Electricity, and Oil & Gas sectors.

Integra comprehensive portfolio of services and support programs, in addition to our 20-year long field experience, has contributed to our recognition as market leader, and identified us as the epitome of field service optimization.

By offering technical and consultative sales support in all service aspects, Integra achieves seamless customer service excellence and ensures that clients feel comfortable with their new technology and enthusiastic with our brand.

11.Surveillance & monitoring (CCTV)

Our range of Ready to Connect sensors

owisio has a full range of intelligent devices organized by requirement type (security, environment, energy, etc.). If you have already selected your requirement, you can choose from a range of over 60 “Ready to Connect” sensors.

SECURITY MONITORING

- RFID assets management
- Lighting
- Access control
- Motion detector

ENVIRONMENT MONITORING

- Smoke detection
- Water flood detection
- AirCon
- Temperature / Humidity

POWER MONITORING

- AC current
- DC current
- Battery state of charge
- Generator
- Fuel level and quality
- Third-party equipment

PUSH BUTTON

- Service
- Alert
- Satisfaction

TRACKING

- Ping tracker
- GPS tracker

Integra's Main Customers

Our Alliances

We, at Integra , are proud of our continued excellence and experience as a leading technology provider in our marketplaces. We realize perfectly well the strategic benefit of having strong Alliances to ensure our success. Since our company was established in 2014, we have made strategic alliances with leading local and regional firms. We strive to bring to our customers the best products and services in order to meet the needs of our mutual customers in our markets. In addition, we continually help them in generating sales opportunities through comprehensive Marketing programs, technical support, financial services, and product aggregation and distribution throughout the country and region.

Steel Structures & Camouflage Solutions

What are our Manufacturing capabilities?

Steel Mounting Structures

Stub Tower	GF Towers	Monopole	RDS	Poles	GRD	RDS	COW
✓	✓	✓	✓	✓	✓	✓	✓

What are our Manufacturing capabilities?

Camouflage Solution

Palm Tree	Flag Pole	Mosaic Tower	Light Pole	Water Tank	Advertising Board	Smart Pole	Pigeon house	chimney Structure	Minaret
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

What are our Manufacturing capabilities?

We Provide All types of Steel and Camouflage Structures

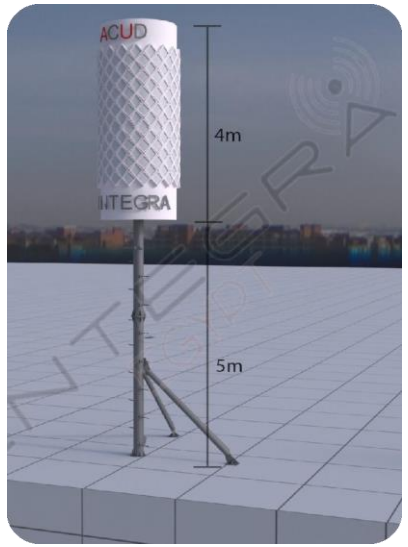
Service summary

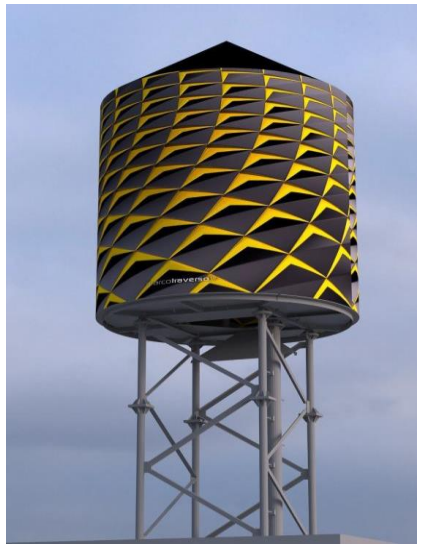
Steel Mounting Structures

- Stub Towers
- GF Towers
- Monopole
- RDS
- Poles
- Cow
- All steel Mounting Structures

Camouflage Solution

- Palm Tree
- Falg Pole
- Light Pole
- Mosaic Tower
- Water Tank
- Advertising Board
- Chimney
- Pigeon house
- Minaret
- Smart Pole





Integra's Main Customers

Thank you