

Connectivity

World-class
infrastructure which
enables citizens to
connect to high-speed
internet.

SENTTECH
CONNECT

Transforming citizens lives through intelligent connectivity

#S4IR



Connectivity

About SENTECH

SENTECH is all about connecting you to the world and connecting the world to you.

SENTECH SOC Limited is a State-Owned Company operating in the ICT sector.

SENTECH offers digital content delivery services to Public and Commercial entities.

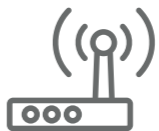
In keeping abreast with rapid changes in the information and cyber physical society, SENTECH's product and service offering has expanded to include SENTECH CONNECT which is Connectivity tailored for all sectors in rural and underserviced areas.

Connectivity Technology

SENTECH CONNECT provides high speed broadband access, always on Internet connection for government facilities in hard-to-reach areas in South Africa with a minimum speed of 10Mbps scalable to 100Mbps. The network enables data, voice, video and other multimedia applications for any device, any network, anywhere and for any business use. Our team designs networks and implements state-of-the-art fully integrated solutions for the following broadband access technologies:



Broadband Access Network



IP Core/Edge Networks



IP/MPLS Networks



Data Centre Solutions



Transmission/Backhaul Solutions

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Connectivity Technology

SENTECH CONNECT offers five services, namely:



1. Broadband Access Networks

SENTECH CONNECT provides high speed broadband access, always on Internet connection for government facilities in the underserved areas with a minimum speed of 10mbps scalable to 100mbps. The network enables data, voice, video and other multimedia applications for business use.

There are several rival technologies that are competing to deliver broadband connections each with its own distinct advantages and disadvantages.

SENTECH CONNECT solutions provides independent and unbiased end-to-end Broadband Access Solutions to customers in addressing their various technical, operational and business needs. Through its team of experienced and high-performing telecommunications and business professionals, SENTECH CONNECT designs and implements state-of-the-art fully integrated solutions as follows:

5G

Features:

- Supports voice, video calling, data and other multi-media communications,
- Higher voice service quality compared to 4G services,
- Provide download speeds of 14.4 megabits per second and upload speeds of 5.8 megabits per second,
- Provides always on mobile Internet connection,
- Support data transfer speed for downlink at a minimum of 100Mbps and uplink at a minimum of 50Mbps,
- An "All IP Network" (AIPN) model to replace the GPRS Core Network,
- Support interoperability between GPRS and WiMAX.

Benefits:

- A key enabler of IOT,
- High data throughput and low latency,
- Improved end user experience in wireless broadband,
- Lower cost in operating a flat simplify IP network,
- Network Energy efficiency,
- Spectrum efficiency.



Fixed Wireless

Our open access wireless solution provides seamless scalability from 10Mbps to 100Mbps and deploys a fixed wireless access point-to-multipoint solution.

Benefits:

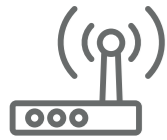
- Alternative last mile connectivity against the likes of ADSL and Fibre,
- Back haul WIFI hotspots to Internet,
- Enable providers to provide Data (Internet), Telecommunication (Voice) & Video (IPTV) services without the worry about cable theft,
- Enabling mobile broadband for service providers.

VSAT

VSAT is affordable commercially off-the-shelf internet solution to connect remotely dispersed sites providing coverage to rural and underserved areas in South Africa.

TV WHITE SPACE

TV White Space (TWS) are unused broadcasting frequencies in the wireless spectrum similar to how 4G broadband internet is delivered to tablets, phones and computers through fixed or portable stations. TWS technology can travel 10km to service numerous customers at any one time making it ideal for rural and underserved areas which are widely dispersed.



2. IP Core/Edge Networks

SENTECH CONNECT IP Core/Edge Networks provides an information exchange between the access network and the core network.

Our Edge Network Solutions is an ideal offering to service providers in addressing their various technical, operational and business needs. As demand for data continue to grow dramatically, providing the capacity for today's revenue-generating high-bandwidth services poses a big challenge for Service Providers. Today's data networks should provide reliability, quality of service, and flexibility to support various applications like voice, video and other network-based services.

SENTECH CONNECT solution leverages on its partnerships with leading network equipment vendors to offer scalable, highly efficient, resilient, comprehensive range of high-performance, cost-effective switching and routing products with key features and benefits being:

Features:

- An integrated, high-density Ethernet switching, IP/MPLS routing, and 10 Gbps interfaces,
- Delivers consumer and business services over a single converged Carrier Ethernet network,
- Service provider grade IP/MPLS/Multi-VRF enabled metro routers and switches,
- Purpose built for high availability.

Benefits:

- Incorporates powerful technology with innovative design,
- The distributed architecture utilises a blend of high-performance processing, significant memory, and powerful switch fabric to handle mobile sessions more intelligently and reliably,
- Call control and packet forwarding paths are separated on different control and data switch fabrics, reducing the number of traffic flow inefficiencies, which diminishes latency and ensures faster call setup time and handoffs,
- With the distributed architecture, all tasks or services can be allocated across the entire platform. This unique approach allows you to deploy more efficient mobile networks that can handle a greater number of concurrent calls, optimise resource usage, and deliver enhanced services, while also providing easy scalability.



3. IP/MPLS Networks

SENTECH CONNECT solutions, experience and expertise in IP technology enables us to provide effective and innovative designs and implementations of MPLS networks. Our Multi-protocol Label Switching (MPLS) technology will speed up network traffic flow making it easier to manage.

Our MPLS functionality includes:

- Data packets are assigned labels. Decision of forwarding is based on the label content without inspecting the packet itself,
- Enable the creation of end-to-end circuits using any protocols and across any medium of transport.

With the following benefits for your network:

- Better reliability and performance due to the traffic management capability,
- Better recovery framework as compared to traditional Layer 2 VPN,
- Ability to create IP VPN based on MPLS model.



4. Data Centre Solutions

With an ever changing cyber security threat, SENTECH's main Data Centre sites have been classified as National Key Points, thus enhancing a safe and secure location for your data storage needs.

Our Data Centre is a centralised repository, either physical or virtual, for the storage, management, and dissemination of data and information organised around a particular body of knowledge or pertaining to a particular business. The main purpose of our Data Centre is to ensure our customers a secure environment to run the applications that handle the core business and operational data of any organization.

Our Data Centre solutions understand the crucial aspects of business continuity that companies rely to run their operations. If a system becomes unavailable, company operations may be impaired or stopped completely.

SENTECH's expertise in IP and data communications offers solutions for optimising and accelerating delivery of applications to end-users for increased user satisfaction. Companies that run high-end and critical applications over the network for communications and business will benefit significantly by having access to the following functionality:

- Load balancing and content switching,
- TCP /SSL offload and acceleration capabilities,
- DDOS and Malware protection,
- Integration of web application firewall system.

Benefits:

- An efficient method for load balancing the server farm. Thus, reducing the number of servers in data centre,
- Higher saving to popular content provider from reduction DC space costs,
- Faster delivery & better optimisation of web contents to its requester,
- Ensure high availability and protect critical sites from DDOS attack,
- Ability to generate secured port sessions,
- Ability to protect against data theft and compliance to PCI DSS standard.

Virtualisation

SENTECH's solutions, experience and expertise in building data centres and deep knowledge in virtualisation technologies assists service-providers shift to the next-generation data centre platforms. These platforms unite, compute, network, storage access, and virtualisation products into a cohesive system for lower Total Cost of Ownership and business agility.

Types of Virtualisation:

- Operating System Virtualisation,
- Server Virtualisation,
- Application Virtualisation,
- Storage Virtualisation,
- Network Virtualisation.



Benefits:

- Yields higher utilisation rate for both servers and storage,
- Able to consolidate resources - not just servers and storages but also for the applications, data & databases, systems, interfaces, desktop, and even business processes,
- Reduce footprint in data centres and thus save costs,
- Better efficiency of energy usage,
- Reduction of expensive administrator costs.

Storage Solutions

Typically, storage is deployed as a “one size fits all” solution, regardless of the kinds of applications the network is running. Such an approach has required multiple servers to address multiple needs, resulting in significantly higher costs and a much greater degree of management complexity. At the same time data is growing dramatically and Service Providers need to manage much larger infrastructures with little or no additional head count. Implementing a multi-tiered common storage infrastructure can dramatically decrease the cost of storage requirements and provide operational efficiencies.

SENTECH solutions in partnership with leading storage vendors can help service providers address their storage requirements with the right mix and match of storage technologies to build simple storage infrastructures to a more complex multi-tiered common storage infrastructure.

Features & Benefits:

- Allows Service Providers to have a single platform for all storage data which is easier to maintain and will incur huge savings on upgrading or purchasing new equipment,
- Reduced cost of capital, lower cost of servicing, logistics and server consolidation,
- Allows full optimisation of service providers storage capacity,
- Dramatically reduced backup and restore times,
- Improves the quality of service by shortening the resolution time by at least 50% which improves customer services.

Data Centre Design & Construction

IT operations are a crucial aspect of most organisational operations. One of the main concerns is business continuity; companies rely on its information systems to run its mission critical operations. If a system becomes unavailable, business operations may be impaired or stopped completely.

It is necessary to provide a reliable infrastructure for IT operations, to minimise any chance of disruption. Information security is also a concern, and for this reason a data centre has to offer a secure environment which minimises the chances of a security breach. A data centre must therefore keep high standards for assuring the integrity and functionality of its hosted computer environment.

SENTECH's Data Centre design accommodates future requirement changes based on inevitability of high performance, higher processor performance and circuit board density, impact of virtualisation and redundancy, green directions and connectivity. SENTECH Solutions covers all Data Centre implementation stages from design and engineering, acquisition, construction and final handover to the customer.

Physical Layout:

- Construction of Data Centre inclusive of racking and cabling,
- Cooling and fire prevention systems for Data Centres,
- Power consideration such as Uninterruptible Power Supplies,
- Video Camera surveillance,
- Network Infrastructure,
- Routers & Switches,
- Security systems such as Firewall, Intrusion Detection and Protection, Systems, Email Anti-spam solution.

Applications:

- DNS, Web and Proxy Systems.




5. Transmission/Backhaul Solutions

As carriers adapt new access technologies to meet customer demands for faster connections and to acquire new customers, their backhaul/transmission networks should be able to adapt quickly, scale and remain cost-effective. SENTECH CONNECT solutions provides independent and unbiased end-to-end Backhaul/Transmission to service providers in addressing their various technical, operational and business needs. Through its team of experienced and high-performing telecommunications and business professionals, SENTECH CONNECT offers scalable, highly efficient, resilient, comprehensive range of high-performance, cost-effective backhaul optimisation products.

Features & Benefits:

- Provides a wide range of interfaces for different types of backhaul links,
- Reduces bandwidth requirements on all cellular links without degradation of voice quality and network reliability,
- Reduces operating costs and capital expenditures,
- Converts TDM traffic to packet-based IP for increased network efficiency,
- Allows faster and less expensive expansion of GSM networks.

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Transforming citizens lives through intelligent connectivity