


BANDIT™

Broadband Access Network
Device for Intelligent Termination

Secure IP+Legacy Broadband Router

The Encore Networks BANDIT™ is a uniquely versatile IP+Legacy Virtual Private Network (VPN) gateway that provides router/FRAD, firewall and IPSec VPN functionality, dial backup, and legacy protocol support, all in one small unit. Flexible architecture combined with the proven ELIOS™ operating system make the BANDIT™ the perfect solution for enterprise customers, carriers, and vertical markets. Enterprise customers are attracted to the robust feature set and the strong price/performance/functionality ratio. Carriers benefit when migrating Frame Relay networks to support other value-added services, such as broadband and IP-based VPN. Vertical markets, such as travel, utilities, lottery, and banking, can quickly and easily migrate from legacy systems to standards-based IP networks. Positioned between the IP core network and the Local Area Network (LAN) or remote legacy terminals, the BANDIT™ provides the conduit for communication between the regional/branch offices and corporate headquarters over IP-based VPNs.

- ▶ Proven, feature-rich ELIOS™ operating system
 - ▶ Remote office/branch office solution
 - ▶ Broadband access (WAN/LAN)
 - ▶ Automatic dial backup
 - ▶ Protection of corporate Intranet assets via comprehensive firewall capabilities
 - ▶ Guaranteed delivery of mission-critical data via Quality of Service (QoS) features
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- ▶ Easy migration from today's networks to secure IP VPNs
 - ▶ Inexpensive to set up and maintain — low cost hardware, no software licensing
 - ▶ Highly reliable for connectivity of legacy protocols
 - ▶ Worry-free protection of data and management functions with IPSec encryption

COST-EFFECTIVE SOLUTION

The BANDIT™ is an extremely affordable solution for applications that require multi-service functionality. Using a single device to consolidate networking tasks reduces hardware and simplifies network operations. Networks currently using multiple devices to handle IP routing, VPN, firewall, and legacy protocol support will see improved performance and significant savings. The strong price/performance/functionality ratio, no software licensing fees, and obsolescence-proof design make the BANDIT™ an attractive and economical choice for both enterprise and carrier customers.

INVESTMENT PROTECTION

Many network planners today are faced with the necessity of large-scale equipment upgrades to make networks compatible with next-generation IP services. The BANDIT™ is the core of Encore's Cap and Grow strategy for migrating legacy protocols to a standard IP-based infrastructure. Connecting legacy equipment to next-generation networks and services is quick, inexpensive, and immediate. Network migration can occur seamlessly without impacting revenue.

EASY INSTALLATION AND MANAGEMENT

Plug-and-play features simplify installation and enable management from a central location. Remote dial-up users can begin using the VPN in no time. The unit arrives at the remote location, the network port and power are quickly connected, and the BANDIT™ is ready to GO!

IPSEC VPN TUNNELING AND SECURITY

The BANDIT™ is a versatile IP+Legacy VPN gateway, providing up to 30 simultaneous tunnel connections. The use of hardware-assisted technology allows the BANDIT™ to perform encryption and IP routing without impacting overall performance and throughput. Internal IP addresses can be shielded from public view through a combination of Network Address Translation (NAT) and Private Address Translation (PrAT).

VERSATILITY

The small, standalone design of the BANDIT™ unit, its powerful ELIOS™ operating system, and its use of standards-based IPSec make it easy to integrate with other networking equipment and allow it to interoperate with off-the-shelf IPSec software clients. Two 10/100 Base-T auto-sensing Ethernet ports handle LAN and WAN subscriber interfaces to the device via standard RJ45 connections. An RS-232, V.35, X.21, or RS-449 serial port is optional for applications that support legacy protocol conversion and spoofing such as SDLC, X.25, ALC, X.42, and polled async. An optional expansion module provides a 56/64 kbps DSU port; a single or dual T1/E1 channelized CSU/DSU port; or a DMZ Ethernet port for expanded LAN/WAN capability. A dedicated supervisory console port is standard, as is an internal V.90 modem for dial-up applications.

To Order:
 Call Teleprime at 1-847-252-7100 or
 Email sales@teleprime.com

FEATURES AND BENEFITS

Multi-Service Platform

Single multi-function unit running on the ELIOS™ operating system replaces the need for multiple single-function units — router/FRAD; IPsec VPN gateway; firewall; legacy data protocol support; and dial backup capability

Flexible Connectivity

Meets customer requirements today and tomorrow.
Standard: two Ethernet 10/100 Base-T auto-sensing connections for LAN or WAN using standard RJ45 ports; internal V.90 modem for dial backup or remote management
Optional: serial port for legacy applications; expansion slot for CSU/DSU with ASAP (any service, any port) capability

IP Security and VPN

Interoperates with off-the-shelf IPsec VPN clients; provides tunnel passthrough, initiation, multiplexing, switching, and termination; DES and 3DES encryption; ESP and AH encapsulation; HMAC MD5 and HMAC SHA-1 authentication; IKE, ISAKMP and PKI(X.509) key exchange

Corporate Network Security

Dynamic firewall functionality protects corporate networks — stateful inspection; event logging; protection against Denial of Service (DoS) attacks; IP filtering

Legacy Protocols

Extensive legacy protocol conversion and spoofing is provided for seamless migration path to IP-based networks – SDLC, VISAIL, Poll-Select, Bisync, X.25, ALC, SCADA, MATIP, CDLC, and X.42

Disaster Recovery

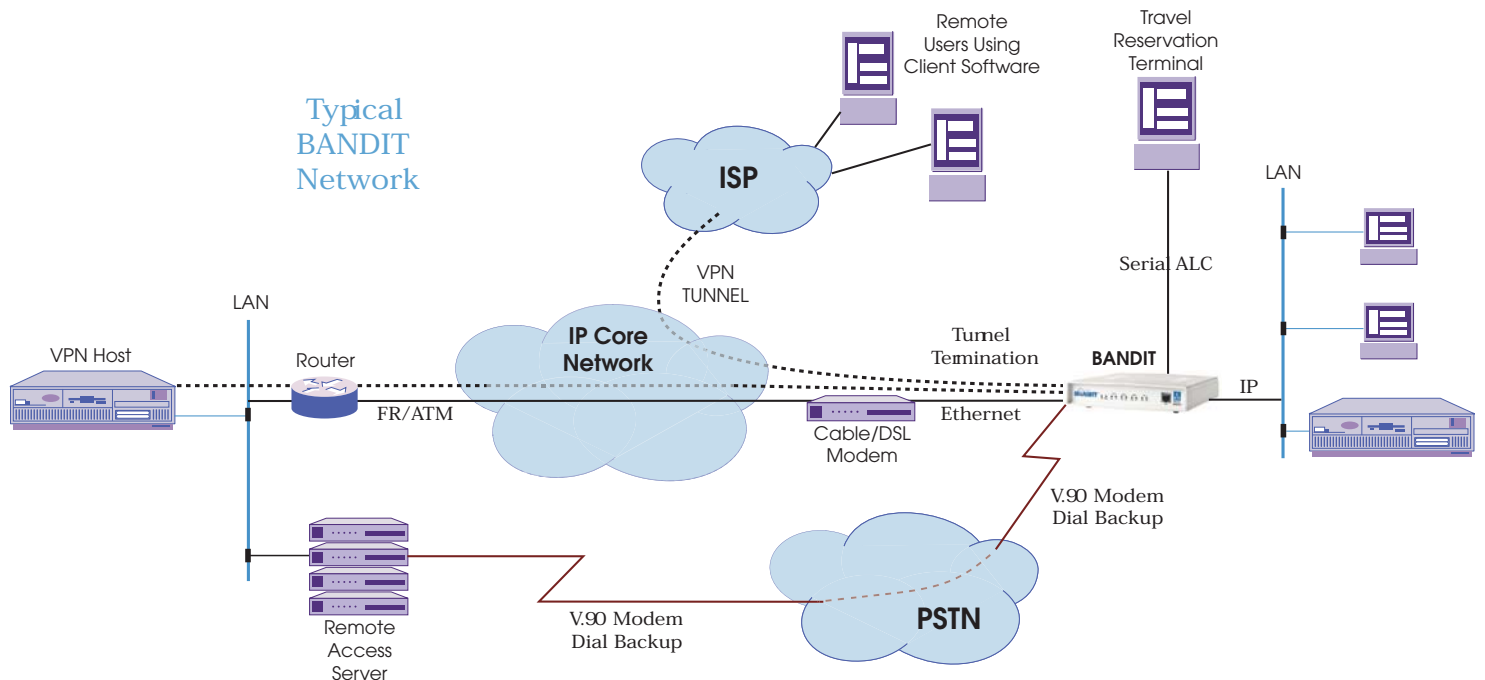
Secure dial backup over auto-learned routes provides continuous service availability; incoming or outgoing connections; secured using PAP/CHAP; fast switchover

Built-In Diagnostic Tools

Comprehensive built-in troubleshooting tools that reduce the time it takes to identify and resolve problems

Superior Network Management

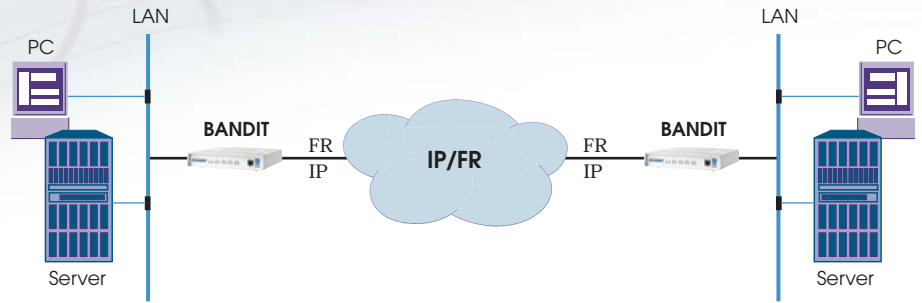
SNMP support helps carriers integrate with their existing OSS systems; in-band and/or out-of-band access via telnet or supervisory port; built-in security via multi-level password access; guaranteed SNMP delivery ensures that critical events are preserved during network outages



APPLICATIONS

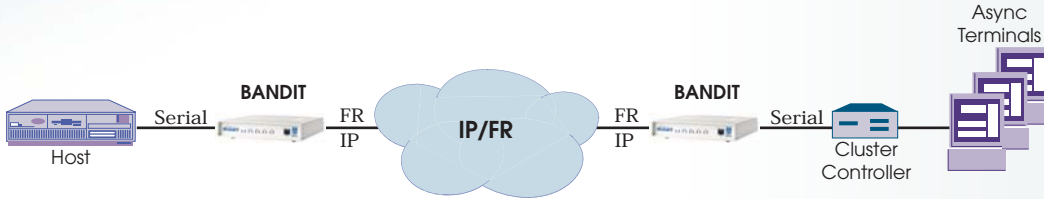
Access CPE Router/FRAD

- Multi-branch connections



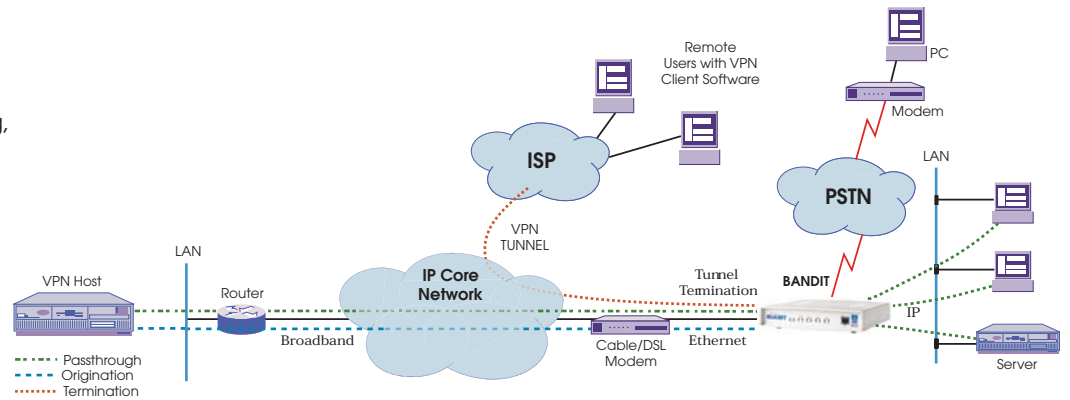
Legacy Support

- Migration of legacy protocols to packet-based networks



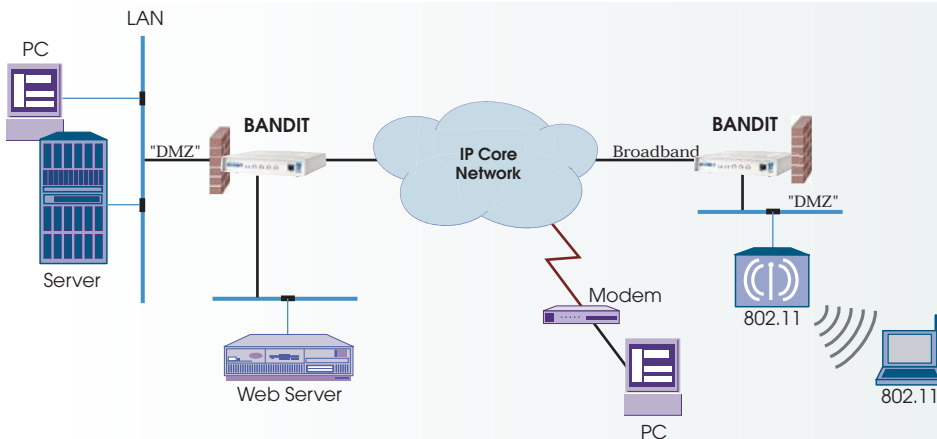
IPSec VPN

- User-based or port-based tunneling
- Passthrough, origination, multiplexing, switching, termination
- Built-in, uni-RAS port functionality for dial-up VPN support



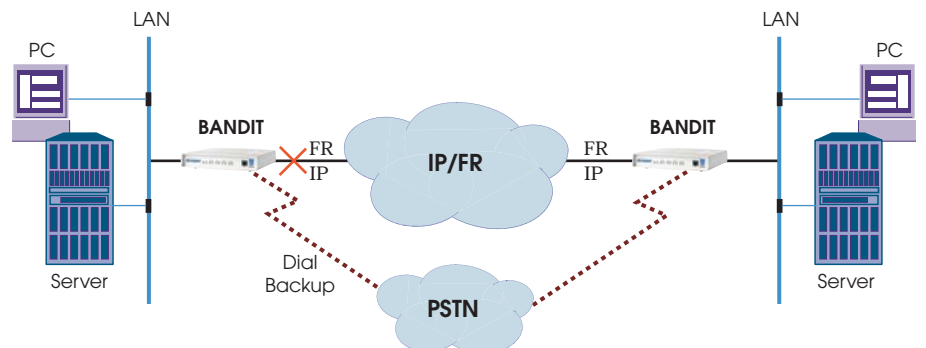
Firewall Security

- Built-in stateful firewall functionality
- IP filtering
- Protection against Denial of Service (DoS) attacks
- Additional DMZ LAN port



Dial Backup

- Disaster recovery
- Remote management



TECHNICAL SPECIFICATIONS

Architecture

ELIOS™ operating system; high performance RISC-based processor; VPN hardware assist; IP QoS enforcement, CIR enforcement

Port Interfaces

Standard: 2 Ethernet 10/100 Base-T auto-sensing RJ45 connectors for LAN and WAN; standard internal V.90 modem

Optional: Serial port: RS-232, V.35, X.21, RS-449 for legacy protocol conversion and spoofing such as SDLC, X.25, ALC, MATIP, async, polled async, CDLC, and X.42

Optional: expansion slot for choice of 56/64 kbps DSU port, single or Dual T1/E1 channelized CSU/DSU port with drop and insert capability, serial port, or DMZ Ethernet port

Network Protocol Support

Frame Relay; PPP; Multi-link PPP; PPPoE; X.25; IP; Ethernet

IP Routing

Static routing, standard RIP v1/v2; IP fragmentation/reassembly; routing over VPN tunnels; DHCP client/server/BootP; IP QoS, priority queueing, dynamic bandwidth allocation, Diffserv marking and classification. 802.1q VLAN tagging, VRRP (RFC 3768)

IP VPNs

Support of up to 30 simultaneous tunnels; User and port based tunnels; tunnel initiation, pass-through, multiplexing and termination; standard IPsec encryption (RFC2401); GRE (RFC 1701); Selective Layer Encryption for VPN over satellites (SLE); DES (56bit) and 3DES (168 bit) encryption; ESP (RFC2406) and AH (RFC 2402) encapsulation; HMAC MD5 (RFC2403) and HMAC SHA-1 (RFC 2404) authentication; IKE(RFC 2409), ISAKMP(RFC2408) and PKI (X.509) key exchange; CEP & Digital Certificates and DH groups; compatible with other IPsec VPN clients; SLE to IPsec tunnel switching.

Stateful Firewall

Built-in stateful firewall functionality; IP filtering; protection against Denial of Service (DoS) attacks, additional DMZ LAN port; NAT and PrAT (Private Address Translation).

Dial Backup

PAP/CHAP authentication; PPP; fast switchover; auto-learning of IP routes; incoming or outgoing connections

Network Management

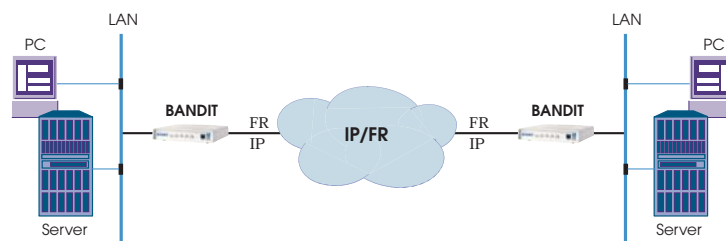
Supervisory port (out-of-band); SNMP (MIB-II with extensions); telnet (in-band); multi-level password protection; and FTP for software upgrades and configuration updates

Physical Specifications

Height: 1.7 in. (4.32 cm); width: 8.36 in. (21.34 cm); depth: 9.0 in. (22.86 cm);
weight: 1.5 lb. (0.68 kg)
Power (external): 100 to 240 VAC, 50-60 Hz
Temperature: 32° to 104° F (0° to 40° C)
Humidity: 10% to 85% non-condensing
Altitude: Up to 10,000 ft. (3,048 m)

Agency Compliance

Safety: ANSI/UL Std. No. 60950, 3rd Edition (U.S. Safety)
CAN/CSA-C22.2 No. 60950 (Canadian Safety)
EN 60950, European Safety (CE Mark)
Emissions: FCC Part 15, Sub-Part B, Class A (U.S.)
EN 55022: 1998 (Europe)
Immunity: EN 55024: 1998 (Europe)



CDMA/GSM Wireless Module

The CDMA and GSM modules create a BANDIT™ family of wireless products that offer secure IP connectivity to users of legacy protocols for transport over wireless networks. The combination of these capabilities offers enterprises a quick and economical solution for both permanent and temporary wireless installations.

For end-users, the economics of using cellular for telemetry or transaction based applications as an alternative to expensive landlines or satellite links are particularly strong. Many telemetry and transaction devices such as lottery terminals, ATM's, utility RTU's, security equipment, and point of sale devices operate on dedicated lines with speeds of 56 kbps or less. The BANDIT™ wireless products can be easily deployed to provide up to 144 kbps of cellular bandwidth to support these applications at a significantly reduced cost.

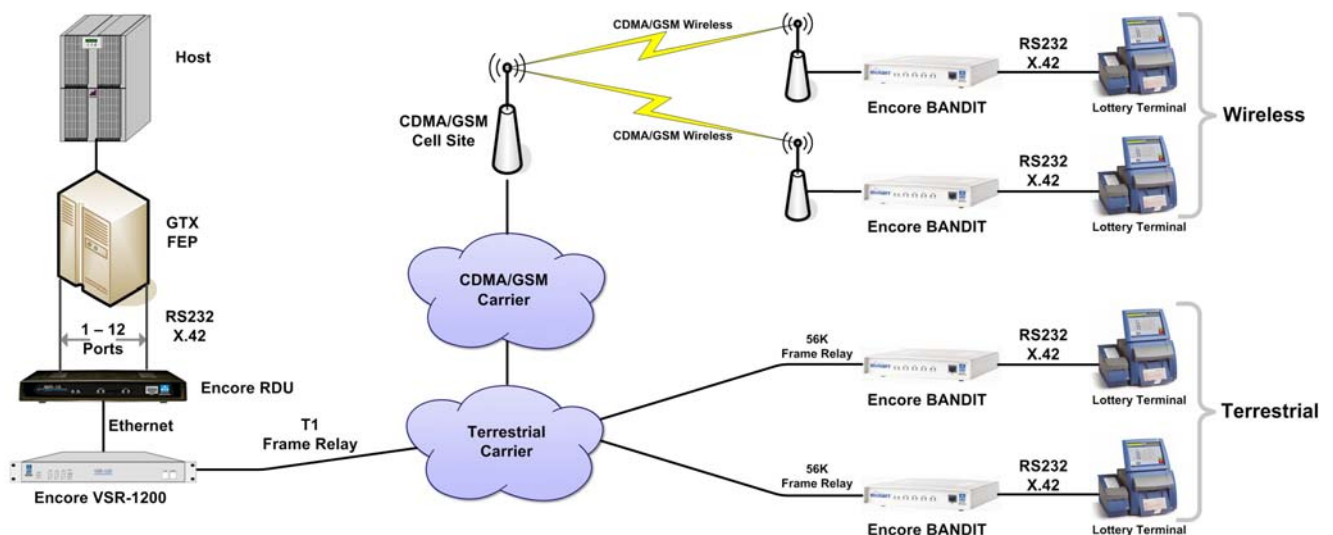
For carriers, the wireless BANDIT™ provides terrestrial carriers having "out of territory" cellular partnerships with a great last mile solution. Where a terrestrial carrier may lack a footprint in a particular region, the wireless BANDIT™ can be used with their cellular partner to quickly simplify a large customer deployment and save the carrier from having to lease data circuits from a LEC.

The new cellular modules fit in the universal card slot of the BANDIT™, BANDIT-IP™, BANDIT-PLUS™, and VSR-30™. The modules can be ordered separately or be factory pre-installed.

Sample Lottery Application

Cellular offers quick deployment and a low cost transport for state lotteries. Today when state lottery signs up a new retailer it can take up to six weeks for a landline to be installed. With the wireless BANDIT™, a new retailer can begin generating revenue immediately. Also the lottery can use cellular connectivity for special events like state fairs, trade shows, sporting events and other temporary locations.

In the diagram below, the BANDIT™ is fitted for either cellular or terrestrial applications. A state lottery quickly deploys new retailers with cellular before switching over to Frame Relay. A lottery could also permanently deploy cellular as a primary transport.



Lottery Over Wireless And Terrestrial With Frame Relay Host



BANDIT™ Includes 0dB Antenna



BANDIT™ Shown With Optional +3dB Gain Antenna

CDMA Specifications:

- ▶ Antenna Interface: 50 Ohm SMA Female
- ▶ EVRC, 13kQCELP
- ▶ Data rates up to 153 kbps forward and reverse
- ▶ Circuit Switch (IS707-A.4)
- ▶ Packet Data (IS707-A.5)
- ▶ AMPS (Analog) voice
- ▶ RUIIM (for China only – see R-UIM Interface)
- ▶ OTASP, OTAPA
- ▶ IOTA
- ▶ Wireless interface: CDMA2000 (IS-2000)
- ▶ Band (CDMA2000) – (Dual Band)
 - Band class 0 (TX: 824 ~ 849 MHz/ RX: 869 ~ 894 MHz)
 - Band class 1 (TX: 1850 ~ 1910 MHz/ RX: 1930 ~ 1990 MHz)

GSM/GPRS Specifications:

- ▶ Dual Band EGSM/GPRS
- ▶ Module (EGSM 900/1800 MHz, EGSM 850/1900MHz) designed for M2M and Compliant with ETSI GSM Phase 2+ standard
- ▶ Class 4 (2W @ 900 MHz)
- ▶ Class 1 (1W @ 1800 MHz)
- ▶ Data circuit asynchronous, transparent and non transparent up to 144000 bits/s
- ▶ Fax group 3 (Class 1 and 2)
- ▶ GPRS packet Data features
- ▶ GPRS Class 2 or Class 10
- ▶ Coding Schemes: CS1 to CS4
- ▶ PBCCH support

Safety and Governmental Agency Approval :

The CDMA module shall comply with the following standards or guidelines:

- ▶ IEC950, for electrical safety
- ▶ UL950, for electrical safety
- ▶ FCC Part 15
- ▶ FCC Part 22 (800 MHz), Part 24 (1900 MHz)
- ▶ CSA for Canada
- ▶ CDG 1, 2 (IS-98D, IS-898)
- ▶ CDG 3 (application specific)