



GSM on the Waves

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Sept 11th, 2008

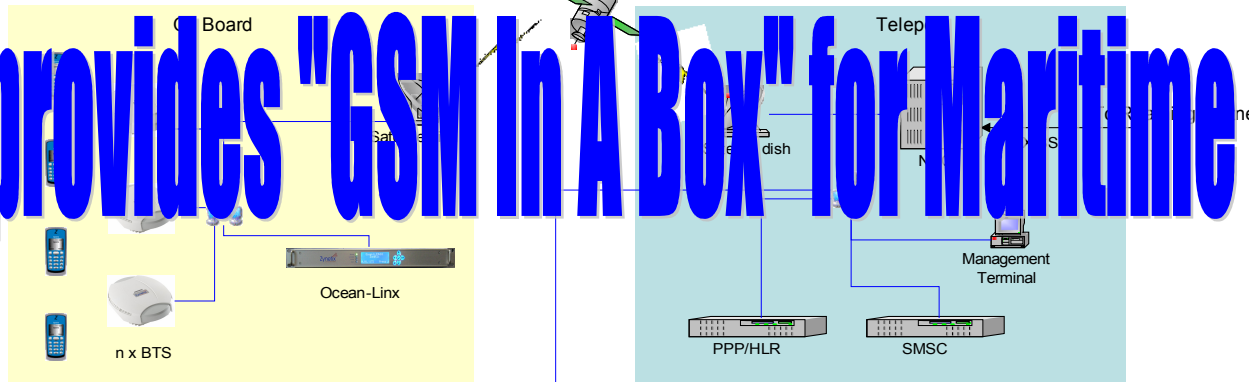
Zynetix Maritime GSM

- Maritime GSM Class101
- Introducing Zynetix
- Linx: flexible new GSM solution

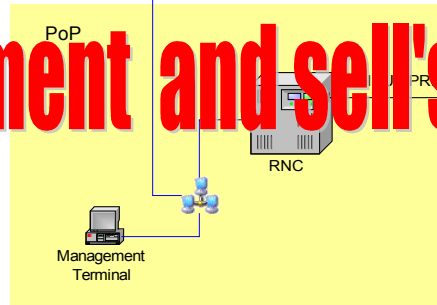


GSM Solution Architecture

Zynetix provides "GSM In A Box" for Maritime vessels



Zynetix builds equipment and sell's to Service Providers



Ship-based

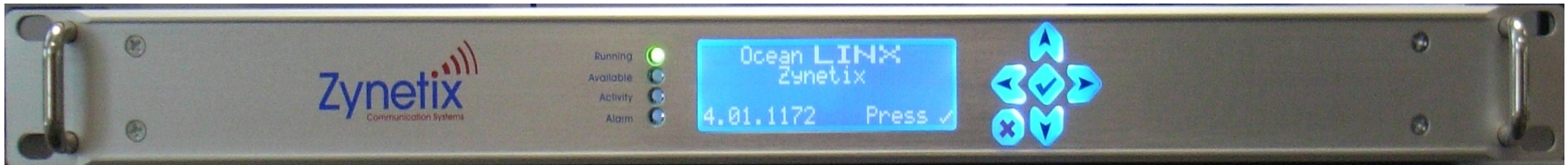
Host carrier & Teleport

Introducing Ocean Linx

Flexibly fulfils wide spectrum of requirements

Feature-rich PrePay Platform (option)

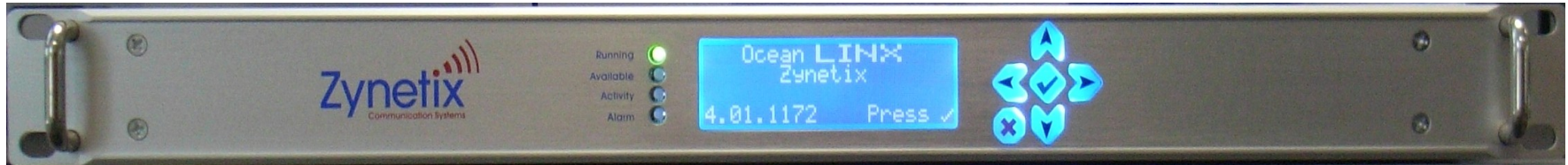
Satcoms - VSAT & FleetBB



Robust platform - 'hardened' Linux & solid-state

Cost-effective - CapEx & OpEx

Scaleable - central Config & Mngt



- Shown User Demand is real
- Communications are important to crew morale
- Solutions: Flexibility is key - single for all needs
- Roaming & PrePay: voice, SMS, GPRS (B'berry etc)
- Ideal platform for Service Provider entering GSM Crew Calling market

Flexible cost-effective GSM service delivery

Martin's Prediction

With-in 18 months GSM will become the standard for all Maritime vessels and crew will demand the service.

Thank you

Satcomms & Compression

Introducing Ocean Linx

- VSAT or FleetBroadband (standard IP mode)
 - 'loosely-coupled' elements
- Backhaul bandwidth selectable to maintain quality
- Bandwidth mngt
 - codecs: EFR, AMR, MELP (2.4 KBps)
 - effective backhaul rates: 33 / 12 / 8 kbps
 - packet coalescing & concatenation
- IP backhaul - static config or tunnelled
- All units shipped as 'Vanilla' - config downloaded



Specific Maritime Features

➤ Regulatory

- Broadcast non-geographic MNC CC
- GPS cut-off outside International waters
- ‘Welcome SMS’ on Premium service

➤ Desirable

- On-board MSC
 - Fast cell-cell handover - lower dropped calls
 - Local management - LCD screen & SNMP alarms
 - Call compression - reduce OpEx
 - Handset management - reduced backhaul signalling
- ‘Plug’n’Play’ central config management
- Ease of backhaul IP set-up
- Interface to ship’s PBX for free on-ship calls
- Scale cost-effectively from 20 to 5,000 subs

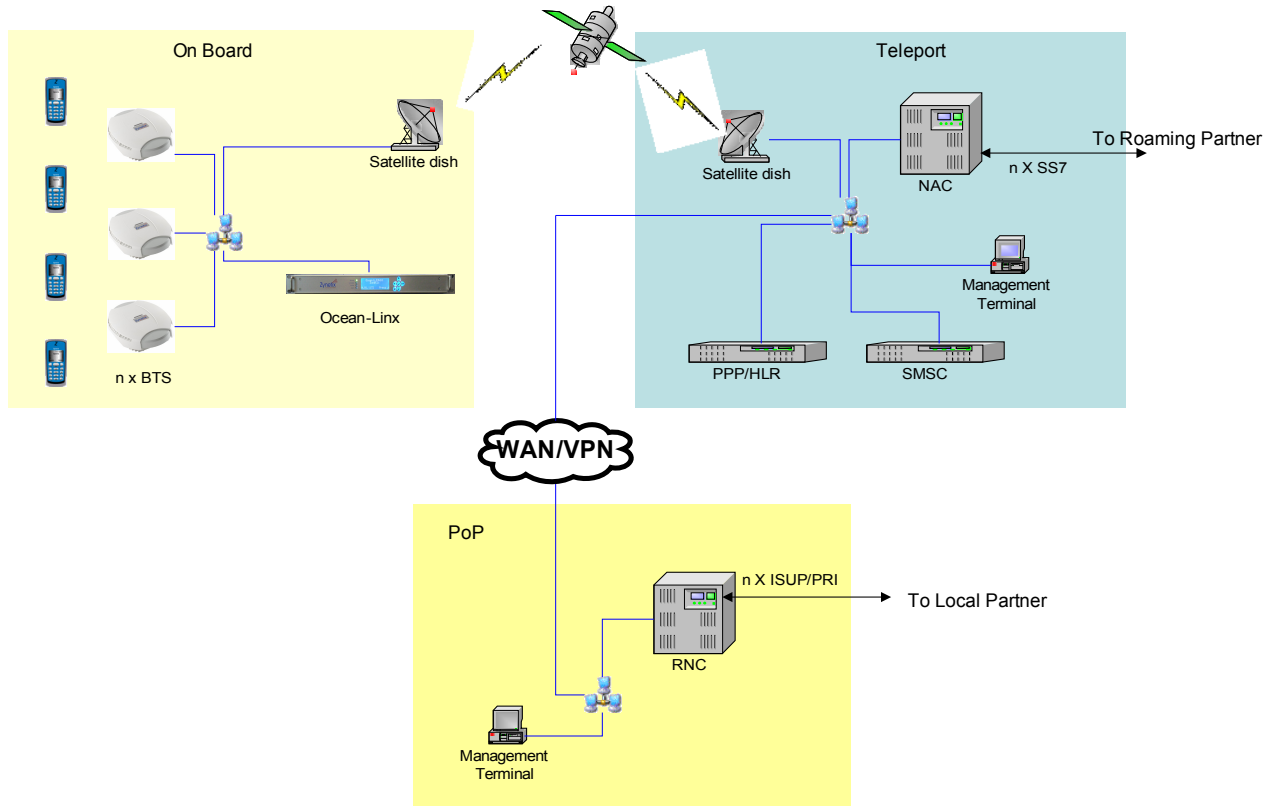
Zynetix expertise

- focus: IP MSC on standard IT h/w platforms
- use IP BSC - highly integrated into MSC
- five year track record with ip.access
- builds equipment - sell to Service Providers
- extensive SatComs & IP expertise
- Apr '07: acquired by Sonus Networks
- No. 3 globally for GSM infrastructure on Cruise Liners
- 2008: 2nd generation Maritime Portfolio

Advanced Roaming Solution

- Multiple MSC identities - each Ocean Linx can have more than one logical identity - for inbound Roamer capture
 - If Primary identity does not have roaming agreement (e.g 901 xx) then MSC assumes Second identity (e.g. 234 xx)
- Central Network Address Controller
 - single macro-network identity (GT/ MSRN etc)
 - Linx auto-establishes IP connection to core & authenticates Similar philosophy to 3G Femto deployment
 - makes remote elements ‘Commissioning free’

GSM Solution Architecture



Ship-based

Host carrier & Teleport