Setel’s SmartBox - V™
Versatility, independence, security in one box over FleetBroadband

Version 2.0
3 October, 2013
## Revision history table

<table>
<thead>
<tr>
<th>Document Issue</th>
<th>Date</th>
<th>Stratos owner</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>01-30-2013</td>
<td>Setel Hellas</td>
<td>First edition</td>
</tr>
<tr>
<td>2.0</td>
<td>10-03-2013</td>
<td>Setel Hellas</td>
<td>Second edition</td>
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1. **Overview**

SmartBox-V™ is a natural extension of Setel’s Intelligent Vessel solution, designed for use in heavy seas and a perfect match for the connectivity requirements of both newbuilds as well as retrofitted vessels.

With Setel’s SmartBox-V™, all maritime companies can bridge the gap between ship and onshore systems as well as streamlining communication processes and cutting costs.

This innovative solution fits neatly with existing information and communication technologies (ICT) systems and provides a complete and secure approach for both ship operators’ needs and crew welfare services onboard.
2. Typical users

The SmartBox-V™ solution enables maritime companies to meet their ICT needs by allowing them to:

- Monitor and calculate performance
- Evaluate and control the usability of bandwidth/volume
- Have real time remote access for monitoring and support
- Apply corporate policy in communications
- Enhance crew morale and improve crew retention

3. Key features

The main features of SmartBox-V™ are summarised below:

- Multiple data connectivity solution
  Manual or auto selection for least cost routing (FB, VSAT, 3G, Wi-Fi, etc.) can support multiple IP terminals and dial up (F77) under the same interface. There is total integration with existing networks.

- Vessel-office integration
  Using either a private or hosted space based visible sensor (SBVS) hub, a secure seamless virtual private network (VPN) connection is initiated from vessel to shore. This allows for remote management and traffic reduction.

- Powerful firewall and routing
  There are strict firewall rules, “black-hole” routing and secure socket layer v3 (SSL v3) encryption prevents man-in-the-middle attacks.

- Crew welfare services
  Crew internet café, Wi-Fi access and telephone services. Centralised personal identification number (PIN) management and pre-payment central control for data and voice. Extensive reporting and integration with Intelligent Office.

- Email and data transfer

- Voice over Internet Protocol (VoIP) Telephony integration
Internal VoIP private branch exchange (PBX), integration with Office’s PBX, supports FleetBroadband (FB) and very small aperture terminal (VSAT) terminals via IP trunks and analog voice interfaces.

- **Bandwidth and traffic management and monitoring**
  Granular control on allowed traffic, Layer-7 filtering, traffic prioritisation. Detailed metrics on bandwidth and traffic are obtained with real time monitoring tools for onboard and cumulative monitoring on the hub side.

- **Advanced proxy services**
  Powerful content filtering, restriction policy and web caching both on board and centrally. Removal of advertising and pop-ups.

- **Traffic notification system**
  The traffic notification system is fully supported with three Alert levels and the capability to block inter-vessel communications while allowing remote access from the office.

4. **Benefits to FleetBroadband users**

Setel’s SmartBox-V™ solution offers the following main benefits:

- Demonstrable, immediate return on investment (ROI) guaranteed by least-cost routing (LCR) in data traffic, bandwidth optimisation, remote monitoring.

- Seamless stable and secure operation, remote network management and data gathering.

- Embedded functionality (e-mail, firewall, VoIP) minimises third party add-ons on corporate structure, making it simple and economical to maintain.

- Smart and automatic terminal/air time services selection optimises selection.

- Reduced traffic and bandwidth with advanced filtering and compression.

- Real time reporting and monitoring provides an unparalleled decision support tool.

- Extensive crew welfare assists crew retention.

- Continuously adapting to new operational and functional requirements, it provides a secure investment for the future.

- Simple to use and install and easy to customise and adapt.

- Proven lower total cost (LTC) of ownership.

- 24/7 customer service and technical support.
5. Setting up SmartBox-V™

Before setting up SmartBox-V™, the customer needs to fill out a prerequisites form to allow for easy and on-the-spot configuration.

SmartBox-V™ comes pre-configured, with two or more active networking interfaces depending on deployment. The different network interfaces are either labelled on the case and/or will be accompanied by the relevant documentation, containing configuration information should it need to be altered.

Connect each network interface with the relevant network equipment (network switch, satellite terminal, etc.) using Cat5E/6 cables terminated at RJ 45 plugs.

Using the configuration webpage on http://169.254.254.1/setup, follow the easy set-up guide to fully configure the appliance by entering the information on the prerequisites form.

Equipment needed

- Satellite terminal
- Network cables
- Network switches for customers' local area network (LAN) and ELAN
- Optional FXS/FXO up to eight ports card for connecting with PBX or provide analog telephony
### 6. Technical summary for SmartBox-V™ and SmartBox-V™ powered by Cisco

The technical features of the SmartBox-V™ series are summarised below.

<table>
<thead>
<tr>
<th>Features</th>
<th>SmartBox-V™</th>
<th>SmartBox-V™ powered by Cisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public hub/private hub</td>
<td>All modes supported (public, private and no hub)</td>
<td>All modes supported (public, private and no hub)</td>
</tr>
<tr>
<td>Types of satellite terminals supported</td>
<td>All types</td>
<td>All types</td>
</tr>
<tr>
<td>Number of supported WANs</td>
<td>Up to 13 IP</td>
<td>At least 8 IP, expandable</td>
</tr>
<tr>
<td>Support of physical separation of LANs</td>
<td>Fully supported (i.e. corporate LAN and crew/entertainment LAN)</td>
<td>Fully supported (i.e. corporate LAN and crew/entertainment LAN)</td>
</tr>
<tr>
<td>Service selection</td>
<td>All modes fully supported (auto, manual, semi-auto)</td>
<td>All modes fully supported (auto, manual, semi-auto)</td>
</tr>
<tr>
<td>VPN</td>
<td>Standard feature</td>
<td>Standard feature</td>
</tr>
<tr>
<td>On-board firewall</td>
<td>Fully supported, standard and advanced</td>
<td>Fully supported, standard and advanced</td>
</tr>
<tr>
<td>Quality of service (QoS) control</td>
<td>Supported on both ends</td>
<td>Supported on both ends</td>
</tr>
<tr>
<td>Virtual local area network (VLAN) support</td>
<td>Fully supported</td>
<td>Fully supported</td>
</tr>
<tr>
<td>Uniform resources locator (URL) filtering</td>
<td>Per site/group and white/black list support</td>
<td>Per site/group and white/black list support</td>
</tr>
<tr>
<td>Category filtering</td>
<td>Fully supported, L7-filtering with ipTables</td>
<td>Fully supported, L7-filtering with ipTables</td>
</tr>
<tr>
<td>Presentation layer filtering</td>
<td>Fully supported</td>
<td>Fully supported</td>
</tr>
<tr>
<td>Port and IP filtering</td>
<td>Fully supported and integrated</td>
<td>Fully supported and integrated</td>
</tr>
<tr>
<td>User access control</td>
<td>Pin generation and prepaid setup fully supported</td>
<td>Pin generation and prepaid setup fully supported</td>
</tr>
<tr>
<td>Support time and volume based internet pin cards</td>
<td>Both are fully supported</td>
<td>Both are fully supported</td>
</tr>
<tr>
<td>Feature</td>
<td>VoIP technology</td>
<td>Volume notification and alerts</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td></td>
<td>Fully supported through Asterisk PBX (included)</td>
<td>Traffic notification system is available with three alert levels and auto-suspend capability</td>
</tr>
</tbody>
</table>
7. Test results

The results of the SmartBox-V™ VPN over FleetBroadband compression tests are shown below.

FleetBroadband traffic tests

<table>
<thead>
<tr>
<th>File</th>
<th>Original size</th>
<th>Transferred size</th>
<th>Compression (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word document (.doc)</td>
<td>1032192</td>
<td>643395</td>
<td>37</td>
</tr>
<tr>
<td>Picture file (.jpg)</td>
<td>1032192</td>
<td>1232826</td>
<td>-8</td>
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<tr>
<td>Picture file (.bmp)</td>
<td>1080056</td>
<td>136258</td>
<td>87</td>
</tr>
<tr>
<td>Picture file (.tiff)</td>
<td>1292866</td>
<td>1021473</td>
<td>20</td>
</tr>
<tr>
<td>Text file (.txt)</td>
<td>1024313</td>
<td>243078</td>
<td>76</td>
</tr>
<tr>
<td>Excel file (.xls)</td>
<td>1025536</td>
<td>499763</td>
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<tr>
<td>Zip file (.zip)</td>
<td>1398053</td>
<td>1399483</td>
<td>-1</td>
</tr>
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8. **Customisation required**

No customisation required.

9. **Further details and support**

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