

## uMobility™: Fixed Mobile Convergence (FMC) Provides a New Level of Mobility

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An increasing number of employees are using cell phones for business calls to extend their reach to wherever they are while in or out of the office. The problem is that they lose many of the features and company image provided by the business phone system and they incur unnecessary added expense for many of their cellular calls. Fixed Mobile Convergence re-unites these employees with the business phone system by uniting dual-mode smart phones with the business phone system.

- A single device (smartphone) can connect through and be switched between wireline (PBX wireless LAN network) and wireless (cellular) networks.
- This includes the ability to seamlessly move calls between the wireline and wireless networks during a call, and provide roaming and hand-off between networks.
- One number reach enables callers to dial the PBX DID extension number and reach the person regardless of whether they are in or out of office, so employees only have one number to give out for business purposes.
- Missed business calls go to the enterprise (PBX) voice mail to leave messages, rather than the smartphone voice mail, so employees have only one place to check for all business calls.
- PBX features are extended to the smartphone including one number reach, enterprise dialing, call hold, call transfer, enterprise message waiting indication and many more.

FMC provides a compelling proposition for enterprises for achieving cost optimization and better accessibility for its mobile users, resulting in improved business efficiency and effectiveness of organization.

Toshiba is pleased to announce we are partnering with Varaha Systems Inc. to offer their uMobility Fixed Mobile Convergence solution to Strata CIX customers through authorized Toshiba dealers.

## Product Description

Varaha's uMobility solution contains two software components: client (smart phone) and server (uMC). Varaha's smart phone client software is available for Symbian/Nokia, Windows Mobile and soon iPhone and Blackberry devices. The client communicates with the network-based uMobility Controller (uMC), selecting the best WiFi or cellular network available for voice and data and joins the smart phone to the CIX as an extension

The uMobility solution makes the desktop mobile, increasing employee productivity through a higher first call connection rate, while saving time and money from managing a single voicemail box. uMobility cuts

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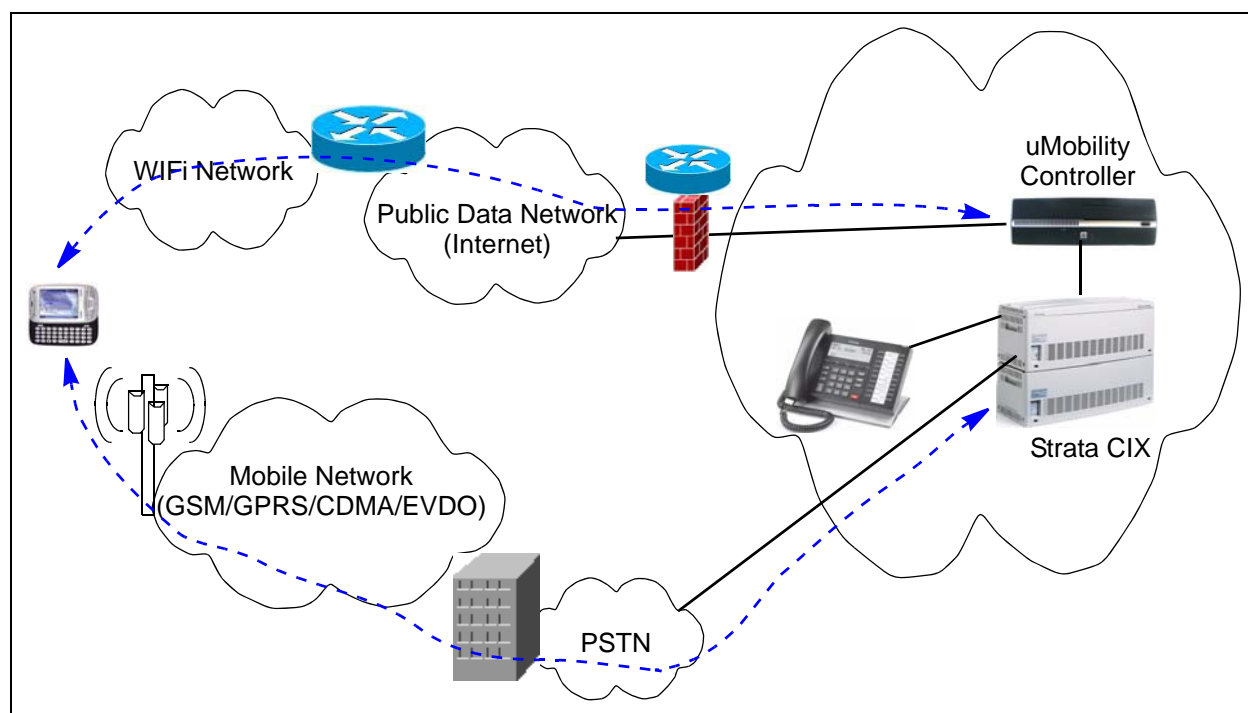
enterprise costs by routing all smart phone-based traffic through the Strata CIX. The use of enterprise network resources saves money through international and long distance dialing rates as well as by cutting 40-60% of cell phone plan costs by moving cellular traffic to available WiFi networks.

uMobility's Service Quality Aware (SQA) software suite means mobile communications enjoy enterprise grade quality at all times. The industry's broadest support for business class smart phones means ubiquitous solution deployment even in the most heterogeneous cell phone environments.



The uMobility solution consists of client and server software.

- The uMobility client is easily downloaded and configured for WLAN-capable Windows Mobile and Symbian-based devices. The uMobility client provides a user-friendly and intuitive dialer-based single telephone interface for enterprise, VoIP and normal cellular calls. Native phone book contacts and call history logs and other such functions are integrated with the client resulting in a single application for all voice call related needs of the enterprise user.
- The uMobility server, called the uMobility Controller (uMC), connects the enterprise network and provides the interface to uMobility clients and the Strata CIX with many other clients on the remote side.



## Features

### Product Features

The uMobility FMC solution provides many valuable features:

- **Mobile Desk Phone:** Secure access to the enterprise for email and data applications, extends PBX telephony services to the Mobile user regardless of wireless connectivity. Enterprise users can dial extension numbers of their enterprise network using cell phones like they can with their desk telephones. Users can also dial out using the enterprise network dial plan for local, national, and international calls. Along with the Single Number Reach feature, mobile Enterprise Dialing (ED) allows users to be always connected with the enterprise network.
- **Single Number Reach (SNR):** The uMobility Controller allows users to be reachable through a single public number provided by the Strata CIX even when they are on the move and not reachable at their desk telephone. Enterprise users, especially customer care, executives, or sales/support engineers usually distribute their DID numbers to people or their customers who need to contact the enterprise users. If someone from outside of enterprise network wants to reach an enterprise user, they will simply dial the DID number of that user and the controller will take care of connecting the call on the uMobility client of that enterprise user. This way enterprise user doesn't need to distribute their private mobile number to people in order to be reachable.
- **Single Voice Mail for Enterprise:** All unanswered inbound calls are routed through to the Strata CIX voice mail system.

Business calls are left in the business voice mail not in cell voice mail, so users have only one place to check for all business messages. Users get an indication when a new voice message is waiting in their enterprise voice mailbox. These voice mail indications are stored by the uMC in case the user is offline

(i.e., not registered with the controller). As soon as user is registered, the uMC sends the pending indications to the client. On receiving the voice mail indication, the user gets connected to the enterprise voice mailbox with a single click on the client interface, allowing fast and easy access to their voice mailbox.

- **Network Convergence:** Use the same GUI for WiFi and Cellular (Sprint/Verizon/Cingular/T-Mobile) telephone calls. The smart phone client will auto-connect to the WiFi network reducing the use of cellular air-time/minutes while increasing the use of FREE WiFi minutes.
- **Seamless Hand-off (HO) between WiFi and Cellular Networks:** The uMobility Controller controls seamless hand-off between the WiFi and cellular networks for an active call. The controller will automatically switch between the WiFi or cellular network and hand-off whenever service quality deteriorates during an active call. The hand-off will occur with no loss of voice or delay, requiring no user intervention.
- **Device Mobility:** An active call can be moved from the smart phone to desk telephone and vice versa without losing the call or letting the remote party know of the change. This is useful for a user who is leaving their desk or returning to it. The hand-off will occur without loss of voice or delay.
- **WiFi Interoperability:** The uMobility FMC solution works over public hot spots, home WiFi, and enterprise WiFi networks. It has been well tested with different WLAN equipment from different manufacturers. (note on public hot spots the user will need to take care of their account and login before uMobility can be used).

Smartphones using the uMobility client have access to many Strata CIX telephony features:

- Make/Receive calls over WiFi and Cell (Answer/Release)
- Call Hold over WiFi and cell
- Simultaneous SIP (over WLAN) and Cellular calls (up to two calls maximum)
- Blind Call Transfer (SIP/WLAN)
- Call Mute and Volume control
- Keypad dialing / DTMF support
- Viewable call status
- Missed call indication
- G711 Audio Codec (SIP/WiFi)
- Unified call logs (for SIP and Cellular calls)
- Personal directory
- Last Number Redial
- Voice Mail setting/access for SIP (WiFi) and Cellular using a common user interface
- Do Not Disturb (DND)
- Speed Dial (with network selection: WiFi or Cellular)
- Call History (Redial, Missed Call, Callers Lists)
- Access to contact list for dialing numbers
- Support for device hard keys (dial, answer, release)
- Diagnostics
- WiFi/Cellular hand-off

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## Benefits

The uMobility FMC solution provides many valuable benefits:

- **Business Connectivity for Mobile Workers:** Reach staff via one number on premise and off campus. Originate calls from the enterprise network. Provide coverage for telecommuters. Provide Strata CIX telephony features such as abbreviated extension dialing, boss/admin coverage, and call control.
- **Reduced International Calling Costs:** International calls from cell phones are routed through the enterprise network. VoIPoWLAN calling while traveling internationally. Long distance charges eliminated while traveling internationally. Local country SIM supported without losing enterprise calls.
- **Business Identity for Mobile Users:** The user can use one device and one number to be extremely reachable. Using one dual-mode smart phone device (WiFi and cellular), the user can always be connected with the enterprise network and avoid missing calls. Using the business number to contact the user protects their private mobile number from the outside world.
- **Improved Productivity and Efficiency:** Irrespective of the location, the enterprise user will always be accessible through the enterprise network. This facilitates timely communication between mobile users and their enterprise network and customers. Even when the user logs into enterprise network, after being offline for sometime, the message waiting indication of enterprise voice mails will be promptly delivered.
- **Enterprise Cost Reduction:** Cost savings result by using the enterprise WiFi network for voice calls instead of costlier cellular minutes. Even when the user is not in the enterprise network, the uMobility solution helps to reduce the cost by using public WiFi networks whenever available. And if user is in a cellular network, cost is reduced by allowing the uMobility Controller to place the outbound call through the enterprise network, utilizing cheaper wireline long distance rates.
- **Dual Mode Functions:** The uMobility client for PDA and smart phones provides a single telephone interface for VoIP and cellular calls with integrated features like contacts, call logs, telephone features and more. The user-friendly and intuitive dialer-based interface of uMobility allows users to make/receive VoIP calls over WLAN and cellular networks.
- **Integrated Experience:** The dual mode smart phone handles both VoIP and cellular calls. The device phone book contacts and call history functions are natively integrated with the uMobility client resulting in a single application for all voice call related needs of the user.

## Ordering Information and Part Numbers

The following Parts are available on the FYI web site.

When using a server purchased from Toshiba start with part numbers ending -PKG.

Ensure that you have ordered a CIX IP Port license for each user. Additional MIPU and IP Port licenses are needed for Reserved Pool based on traffic requirement.

| Part Number   | Description   |
|---------------|---|
| EFMC-5UL-PKG  | Five user system with Linux™ Server application software, five user license, seven CIX IP Port licenses (5 users, 2 reserve pool) plus first year support. New CIX extensions will require MIPU ports and IP Port licensing separately.   |
| EFMC-25UL-PKG | 25 user system with Linux server, application software, 25 user license, 33 CIX IP Port licenses (25 users, 8 reserve pool) plus first year support. New CIX extensions will require MIPU ports and IP Port licensing separately.   |
| EFMC-LIC-5UL  | Additional five User Licenses   |
| EFMC-LIC-25UL | Additional 25 User Licenses   |
| EFMC-LIC-SUP  | uMobility annual support license. This is a per site license, required each year. Please specify number of years as quantity. Refer to the Support section of this document for more information.<br>Note: This is a special promotion until June 30, 2009. Starting July 1, 2009 the support price will be based on the number of users. |

## Technical Requirements

Technical training and a certification test are provided on-line. The dealer and customer must complete the uMobility Site Survey to determine what is required of the customer's wired and wireless network before installation. To ensure a successful installation and customer experience it is required that the trained and certified dealer technician go through site survey with the customer.

Each uMobility user (client) requires an IP endpoint license and availability of an MIPU port configured in the Strata CIX system. Additional IP endpoint licenses and MIPU ports are needed for the Reserve Pool users to handle uMobility features such as Single Number Reach, WiFi/Cellular hand-off, and enterprise dialing via cell mode.

Toshiba recommends that the creation of three reserve pool users for every 10 uMobility users connected to the Strata CIX system. Round up when calculating the reserve pool size. For example, if the system has 25 uMobility users, eight reserve pool users should be created. However, the exact number of reserve pool users for any particular system will depend on call profiles and feature usage.

Remember that each user requires a MIPU port and an IP endpoint license.

We have created a System Configuration Worksheet to help you sell and quote FMC solution. You can download this System Configuration Worksheet from the FYI web site 3<sup>rd</sup> Party section. Refer to the System Administration Guide for additional information.

## Strata CIX Quote

The Quote tool will help you configure the mobility system correctly, including the resources and licenses needed for the Strata CIX system. A new tab called uMobility has been added under stations.

## Pricing

The uMobility FMC solution is very cost-effective and a great add-on to enhance the value of your Strata CIX system investment. See the updated Price Book and CIX Quote version currently available on the FYI web site for details.

## License Activation

Licenses are ordered through the Toshiba FYI web site and fulfilled by Varaha Systems. Varaha will send an email with the necessary license information shortly after you place an order through FYI, and it has been processed. Please allow two business days. Enter the license key, received in the email, to activate the license.

There is an annual support license per system. Customers are required to have a valid maintenance license to receive support, hot fixes, and minor software releases.

## Newsletter

Varaha will be sending regular newsletters to the Dealer email address available on FYI. The Newsletter will include information like newly approved cell phones, handsets and other product related information.

## Documentation

The following documents are available on Toshiba's FYI web site, in the 3<sup>rd</sup> Party section, under Varaha.

- uMobility System Administrator Guide
- uMobility Client User Guide for Windows Mobile
- uMobility Client User Guide for Symbian
- uMobility Quick Reference Guide for Windows Mobile

## Training

Training will be conducted on-line through a series of training videos available at: <http://Techtraining.Toshibatraining.com>. Look for Toshiba FMC (uMobility). Training videos can be viewed on-line or downloaded for later viewing. At the time of this announcement training is available under **Beta Site Training > Toshiba FMC (uMobility)**. This is being edited and will be posted in the 3<sup>rd</sup> Party section.

On-Line Training Videos include:

- Setup and connect the uMobility server to the network
- uMobility Configuration - System and User Provisioning (Controller and Client)
- Strata CIX system configuration
- uMobility Installation
- Troubleshooting

## Support

Varaha Systems support is renewable annually starting on the first anniversary of the product activation. Varaha will provide support to users with a valid maintenance license (EFMC-LIC-SUP). The dealer will first call TSD Technical Support during normal business hours, as appropriate, the call will be handled by TSD Technical Support or the call will be sent to the Varaha Support center.

Varaha's response will be made according to the Service Level Objectives defined in the table below. On average, Varaha aims to achieve a 90% attainment rate based on technical support for all of its licensees.

Varaha's 'Business Day/Hour' will mean anytime from 9:00 a.m. to 5:00 p.m. (Central Time), Monday through Friday, excluding all national legal holidays.

| Severity Level | Severity      | Description   | Estimated Response Time | Status Reports |
|----------------|---------------|---|-------------------------|----------------|
| 1              | Critical      | Licensee business process is severely affected and there is no work around                                    | 4 Business Hours        | Daily          |
| 2              | Serious       | Licensee business process is affected but a work around exists  | 6 Business Hours        | Twice Weekly   |
| 3              | Medium Impact | Licensee business process affected but there is no loss of functionality                                      | 1 Business Day          | Twice Monthly  |
| 4              | Low Impact    | All other inquiries or requests including product enhancements and documentation error or information request | 3 Business Days         | Monthly        |

After Hour support: On call, 5:00 PM CST / 9:00 AM PST for emergency down systems at [support@varaha.com](mailto:support@varaha.com) or phone (972) 755-1855.

## Warranty

Software is 'AS IS' without warranty of any kind. CD Media warranty is 90 days from date of delivery.

The server hardware carries the two-year Non-Toshiba Branded Product Warranty.

## Availability

The Varaha uMobility product is currently available for shipping.

## Product Specifications

| Item   | Item        | Specification  |
|--|-------------|--|
| Strata CIX Software                                  |             | Release 5.2 or later   |
| Supported Platform for uMobility Controller software |             | <b>From Toshiba:</b><br>Form Factor: Desktop, Processor: Celeron-D 293 GHz, Min Memory: 1GB, Free HD space: 80GB (Included in Package) |
| Controller Operating System                          |             | CentOS 5.2 Linux Operating System  |
| System Capacities                                    |             | uMC can support: Maximum 250 uMobility users/clients   |
| Client devices                                       |             | See next table.  |
| Protocols  | Signaling:  | Client/Server – SIP RFC 3261   |
|  | Networking: | TCP/IP v4, FTP, HTTP   |
|  | Client:     | UPnP   |
|  | Server:     | CSTA   |

## uMobility Supported Devices

The uMobility client software is supported on Windows Mobile and Nokia/Symbian Series 60 devices. The devices can be obtained through the carriers or through other retail outlets or online. Devices not purchased through the wireless carriers may be 'unlocked' in other words, not tied to any one wireless carrier.

The following are uMobility supported phones available through the US operators.

| T-Mobile   | AT&T   | Sprint  | Verizon  | Alltel   |
|--|--|---|--|--|
| <br>T-Mobile Touch<br><br>Nokia E71<br> | <br>AT&T Tilt<br><br>AT&T 8525<br><br>Nokia E71x<br> | <br>Sprint Mogul<br>VM 50<br><br>Touch<br> | <br>XV6800<br><br>Samsung SCH-I760<br> | <br>PPC-6800<br><br>Touch<br> |

uMobility supported Nokia/Symbian Series 60 phones are shown below:

| Phone            |  |  |  |  |  |  |  |  |
|------------------|---|---|---|---|---|---|---|---|
|                  | GSM   | GSM   | GSM   | GSM   | GSM   | GSM   | GSM   | GSM   |
|                  | E61   | E61i  | E65   | E51   | E71   | E66   | E63   | N95   |
| Operating System | S60 3rd Ed. Symbian 9.1   | S60 3rd Ed. Symbian 9.1   | S60 3rd Ed. Symbian 9.1   | S60 3rd Ed FP1 Symbian 9.3  | S60 3rd Ed Symbian  | S60 3rd Ed Symbian  | S60 3rd Ed Symbian  | S60 3rd Ed Symbian  |

uMobility Supported Windows Mobile phones are shown below:

|                         |  |  |  |   |   |
|-------------------------|--|--|--|---|---|
| <b>Phone</b>            | <br>HTC Apache<br>CDMA    | <br>HTC Wizard<br>GSM                         | <br>HTC Hermes 200<br>GSM | <br>HTC Trinity 100<br>GSM | <br>HTC Elf 100<br>GSM |
| <b>Operating System</b> | WM 5.0 PPC   | WM 5.0 PPC   | WM 5.0 PPC   | WM 5.0 PPC  | WM 6.0 Pro  |
| <b>Phone</b>            | <br>HTC Titan 100<br>CDMA | <br>HTC Vogue 100<br>CDMA<br>Single mode only | <br>SCH-i760<br>CDMA      | <br>HTC Kaiser<br>GSM       | <br>Moto Q<br>GSM      |
| <b>Operating System</b> | WM 5.0.6.0 Pro   | WM 6.0 Pro   | WM 6.0 Pro   | WM 6.0 PPC  | WM 5.0 Std Smartphone   |

Refer to the Toshiba FYI web site or contact Varaha Systems for the latest list of supported devices.

## Note Regarding Battery Usage

Batteries in the handsets used for uMobility functions will need to be recharged more often than the same handset used only for cell phone operation. With normal use, batteries may require recharging each day. Note that Windows mobile devices may exhibit shorter standby times as compared to the Nokia devices. The following is a representative battery usage chart for Windows Mobile Devices:

| Phone Model  | Standard Battery | Standby Time | Talk Time          |
|--|------------------|--------------|--------------------|
| Nokia E51  | 1050 mAh         | Up to 24 hrs | Up to 3 hrs        |
| Nokia E71  | 1500 mAh         | Up to 48 hrs | Up to 5 hrs        |
| TyTN-II / Tilt   | 1350 mAh         | Up to 12 hrs | Up to 3 hrs 20 min |
| HTC Touch  | 1100 mAh         | Up to 24 hrs | Up to 2hrs 30 min  |
| Dopod D810   | 1500 mAh         | Up to 34 hrs | TBD                |
| This table shows example times measured by Varaha in lab tests. Actual times will vary due to operating environment. |                  |              |                    |

Updated information concerning supported devices will be maintained on Toshiba's FYI web site, in the 3<sup>rd</sup> Party section, under Varaha.

Note that the WiFi does drain the battery faster and uMobility access may further reduce the standby time. Also note that the battery performance depends on the device settings, usage, and other conditions.

The following are the additional recommendations used while capturing the battery performance results shown in the table above.

- Turn the IR Beam off to eliminate unnecessary power consumption
- Turn off any 3G data networks like EVDO or HSDPA as they greatly reduce standby time.
- Enable turning off the backlight after 10-20 seconds.
- Enable turning off the device if there is a lack of activity for 1-2 minute.
- Minimize the number of applications running in the background since each application increases the load on the CPU and thus increases battery consumption.
- Enable the 'Key lock' function to prevent accidental key presses.

## Device Requirements for uMobility Client Software

Deployment of the software requires the following system and memory requirements on the device.

| Client Software   | RAM Required | Storage Required |
|-------------------|--------------|------------------|
| Windows Mobile    | 2MB          | 8MB              |
| Symbian Series 60 | 2.2MB        | 2MB              |