



# Java™ Edition

for Mobile Operators

THUNDERHAWK™ by BITSTREAM®

## ThunderHawk

Where mobile browsing takes flight.

It's a simple fact that mobile subscribers won't spend as much time accessing Web-based information on a phone if they feel they're getting a sub-standard, limited version of the Internet.

At issue for mobile operators is how to effectively display news, entertainment and commerce Websites on handsets.

ThunderHawk provides a consistent, full HTML browsing experience between mobile and desktop environments. It's the only browser that satisfies both requirements for a positive user experience: the ability to find and read information quickly.

This positive user experience will increase ARPU, data traffic, and overall subscriber satisfaction.

### Underlying Technology

ThunderHawk technology offers:

- **MULTIPLE MOBILE PLATFORMS**  
Supports a vast range of mass-market and higher end mobile phones.
- **UNDER 100 KB FOOTPRINT**  
Removes complexity from the mobile device for full HTML browsing on mass market mobile phones that would typically not have enough memory to run a browser on the device.
- **COMPACT TRANSPORT FORMAT**  
Data is transmitted to the mobile phone in a compressed transport format, resulting in the fast download and display of Website content. On average, ThunderHawk reduces data size to approximately one fifth the size of the page on the desktop.
- **THE BEST MOBILE BROWSING EXPERIENCE**  
NO repurposing, reformatting or removing content... ThunderHawk displays real HTML Webpages just as they would appear on the desktop for a superior user experience.
- **CARRIER-GRADE SERVER**  
Fast, high-performance, robust, server with scalable architecture for supporting millions of users.
- **OPEN GARDEN/CLOSED GARDEN**  
Increases brand awareness... Subscribers associate operators, manufacturers and content providers with positive mobile browsing experience.



ThunderHawk has a unique Zoom In/Zoom Out magnifying feature that enables subscribers to find and read information quickly.



- **STREAMLINED ON-DEVICE INSTALLER**

Flexible options include pre-installation of browser on device at purchase, at operator level as a data service offering, or at individual end user level through content-driven Websites. Auto-update feature enables easy subscriber software updates.

- **SUPERIOR USABILITY**

Columns of text are fitted to the mobile phone screen width, and a unique "Zoom In/Zoom Out" magnifier enables subscribers to read information quickly. "History" and "Favorites" lists provide fast access to subscriber's chosen sites. Pop-up controls give subscribers the choice to bypass or view popup windows.

- **COMPACT TRANSPORT FORMAT**

Fast, positive browsing experience... ThunderHawk sends the visible Web page region first, rendering the text immediately, so subscribers can read information instantly, while the rest of the images and other data are automatically transferred in the background.

- **COMPRESSION, CACHING & COOKIES**

Advanced image compression technology provides quick delivery of Websites, while caching speeds up display on handsets. Persistent cookie support enables ease of use across Web sessions.

- **HTTPS 128-BIT ENCRYPTION**

Secure end-to-end transmission of confidential data enables subscribers to purchase items online, log into financial accounts, book travel and send and receive e-mail on a mobile device.

- **OPEN STANDARDS SUPPORT**

Subscribers can submit Web forms, view drop down menus and much more on a mobile device.

- **NATIVE CHARACTER & IMAGE SUPPORT**

View Web sites in multiple languages (Western European) and standard Web image formats (BMP, GIF, JPEG, PNG, PJPEG).

## Supported Standards

- AJAX (ECMA-262/JavaScript 1.5; without timer events)
- CSS1
- CSS2 (most important features)
- DHTML level 1
- DOM level 1
- DOM level 2
- Frames
- HTML 4.0
- HTTPS 128-bit encryption
- HTTP 1.0
- HTTP 1.1 (including GZIP compression)
- Image formats: BMP, GIF, JPEG, PNG, PJPEG
- JavaScript (ECMA-262/JavaScript 1.5)
- XHTML (Basic)
- XML 1.0

## Client Specification

Mobile operators can offer ThunderHawk on any phone that supports:

- MIDP 2.0 software
- CLDC 1.0 and/or CLDC 1.1 software