

Ocean Blue Software

White Paper

World's first CI Plus (CI+) Application

(Updated July 2009)

Introduction

Ocean Blue, in June 2008 in conjunction with SmarDTV, demonstrated the world's first Common Interface Plus (CI+) application, delivering advanced graphic applications inside a CAM, to run on a CI+ enabled television or set top box. The new CI+ standard paves the way for delivering highly interactive and secure subscriber content.

The ground-breaking application was previewed in June 2008 at the ANGA Cable show in Cologne. Ocean Blue has developed a complete solution including a CI+ browser software for inclusion in host devices such as set top boxes and IDTVs, Triton, an application authoring tool with applications for the CAM, a CI+ software stack and test and performance tools to ensure compliance. The solution can deliver advanced, visually rich subscriber applications, such as PVR, Pay Per View and Video on Demand services.



Ocean Blue CI+ Product Roadmap

Ocean Blue will be working with the CI+ Forum to evolve its CI+ browser to incorporate new features as specified in specification updates, such as high definition graphic support, 16-bit mode, fast rendering and caching.

Ocean Blue will be implementing and developing to the CI+ standard specification, plus we will also be incorporating optional CI+ features for example;

1. CA PVR Resource

This resource allows the receiver to record protected content and to play it back at a later date.

2. SAS Resource

SAS is "Specific Application Support". The company will be offering a comprehensive CI+ developers pack including: a CI+ software stack, Triton, a CI+ authoring tool, Ocean Blue's visual design system; test and conformance software and activation software for embedding into a digital television.

3. Low Speed Communications

This resource allows the CAM to use communication channels that are available on the host. This can be used as part of a conditional access system or as an interaction channel.

About CI+

The CI+ Forum finalised the CI+ specification in June 2008, for the secure delivery of pay-TV services to digital TV receivers, including set top boxes, iDTVs and PCs.

The CI+ Forum are promoting a CI+ profile for both MHEG and MHP middleware.

There are two major benefits of CI+ compared to the generic CI EN50221[7] standard;

- The CI+ Content Control system introduces a secure link between the CICAM and Host enabling high value content to be encrypted.
- By using the CI+ browser and an embedded application in the CICAM, an advanced MMI can be generated allowing branding of the host to match that of the content provider / broadcaster.

Figure 1 indicates a typical CI+ implementation and the areas of the system solution Ocean Blue can provide.

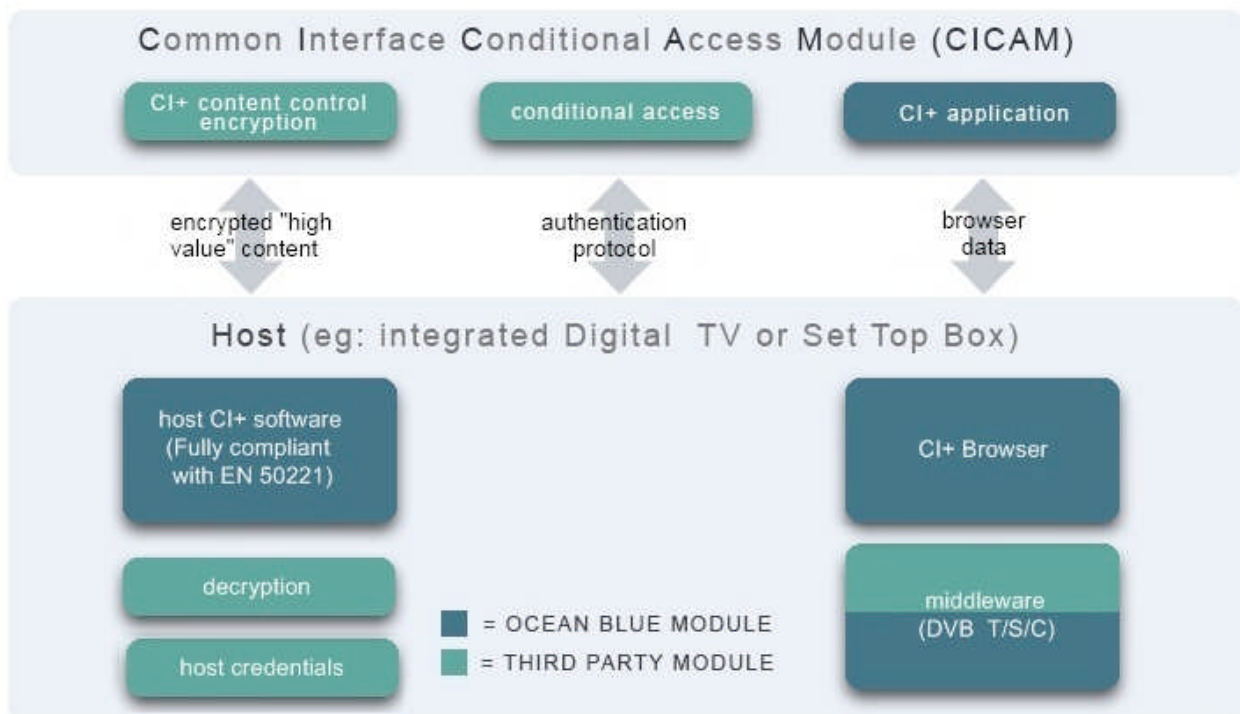


Figure 1: Typical CI+ System Overview

For the content provider / broadcaster, Ocean Blue's Triton authoring tool provides the ability to generate the CI+ applications that are embedded in a CICAM. Triton gives application authors a Windows® based IDE that enhances and speeds up the application development process.

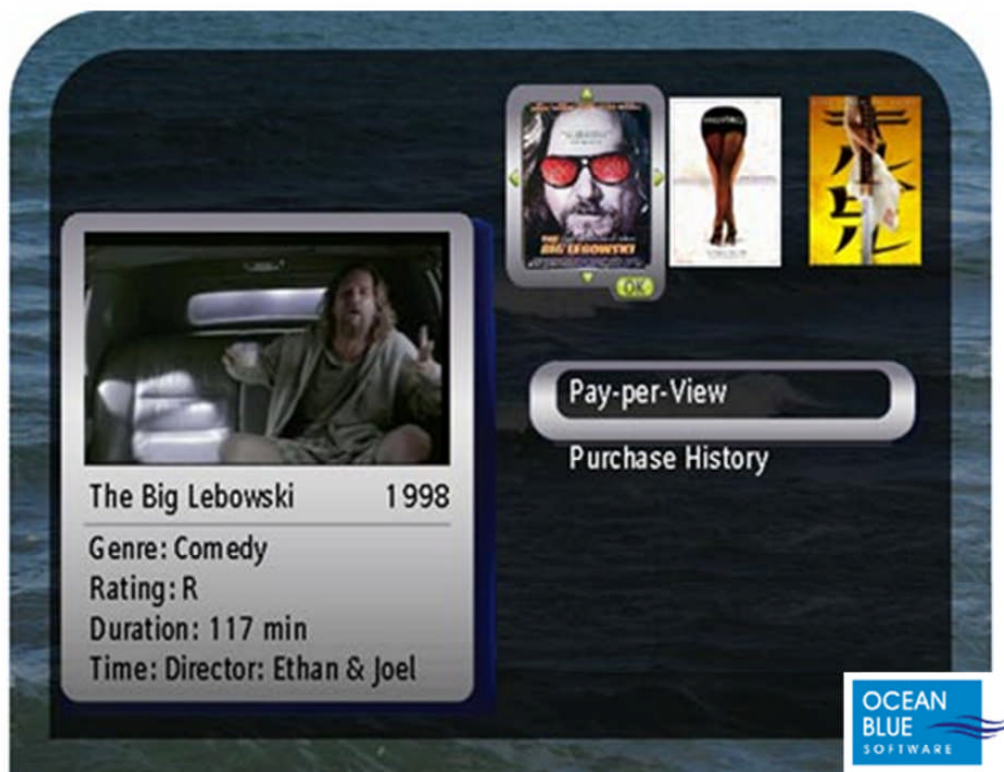
For the manufacturers of host equipment, Ocean Blue's CI+ stack and CI+ browser provide the interface between the CICAM and the host.

Ocean Blue's CI+ browser, combined with the new CI+ system, will offer a range of advanced features and functions, such as;

- The television or set top box can run applications contained in the Conditional Access module (CAM).
- Via the browser and application CI+ menus can be branded, associating encrypted content to the broadcaster / content provider .
- Graphic and display capabilities are greatly enhanced (such as bitmaps, custom fonts and colour schemes).
- Advanced applications combine broadcast CI+ content with embedded CI+ CAM content.

For more information please see [SmarDTV website >>](#)

Below is an example of a CI+ application developed by Ocean Blue, which highlights the type of advanced look and feel of a content provider or cable operator displayed on a television.



Ocean Blue Company Profile

Ocean Blue Software is based in Bristol and Hong Kong and specialises in the development, distribution and support of world-class software solutions, which are incorporated into Digital TV consumer electronics products, present in the Digital Home.

Ocean Blue's software products stand out in terms of maturity, usability, operability and adherence to international digital broadcast standards, notably DVB and DTG.

Ocean Blue is also active in both DTG and DVB assisting in the development of industry standards for Digital Video Recorders (DVR), DVB-H, DVB-SH, MHEG HD support. Ocean has recently opened a sales, development and product test centre in Hong Kong.

MHEG-5 software is embedded into Freeview TV receiver devices; this produces "Press Red" functionality and interactivity. Ocean Blue is in discussions and working with emerging broadcasters from Hong Kong to Africa who are looking to adopt MHEG standards.

For more details please contact: info@oceanbluesoftware.co.uk

SmarDTV Company Profile

SmarDTV, a Kudelski Group company, is an international leader in pay television technology. SmarDTV designs and manufactures highly secure, interchangeable modules and associated enabling technologies, which provide authorized access to scrambled television services. SmarDTV CAMs and CableCARDS are used daily by millions of subscribers around the world. SmarDTV is headquartered in Switzerland with development and sales offices in France, Germany, and Singapore. Please visit www.smartv.com for more information.