

# The AccDC Enterprise API for Advanced UI Automation

Bryan Garaventa  
Founder Developer & Patentee

623 Foothill Dr.  
Pacifica, Ca 94044

1+(650)738-5620

bryan.garaventa@whatsock.com

## ABSTRACT

This paper describes the purpose and functionality of the AccDC Enterprise API for Advanced UI Automation at WhatSock.com, which was founded to promote the concept and utilization of Automatically Accessible Technologies (“AAT”) as an attainable global standard.

## Categories and Subject Descriptors

H.5.2 [User Interfaces]: Graphical user interfaces - *GUI*, Interaction styles - *e.g., commands, menus, forms, direct manipulation*, User interface management systems - *UIMS*.

## General Terms

Management, Performance, Design, Reliability, Human Factors, Standardization.

## Keywords

Automatic Accessibility, Rich Internet Application Design, Dynamic Content Management.

## 1. INTRODUCTION

The AccDC Enterprise API is a scalable dynamic content management system that powers complex behaviors in Rich Internet Applications while ensuring automatic accessibility for Assistive Technology users to maximize consumer marketability.

Nestable AccDC Dynamic Content Objects (automatically generated by the AccDC Enterprise API) are used to render any type of UI component, including form components, dialogs, toolbars, menus, prompts, tooltips, tab pages, navigation panels, draggable windows, or any other visually displayed UI component; all of which are configurable by changing or invoking properties and methods within each object during setup or at runtime.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

*W4A2011 - Microsoft Challenge paper*, March 28-29, 2011, Hyderabad, India. Co-Located with the 20th International World Wide Web Conference. Copyright 2011 ACM 978-1-4503-0476-4 ...\$5.00.

The AccDC Enterprise API includes explicit instantiation and limitless nesting to maximize speed and efficiency, the ability to pull content from any local or remotely hosted resource, the ability to dynamically invoke AccDC Dynamic Content Objects using Unobtrusive JavaScript, automated maintenance routines to prevent DOM cluttering and performance degrading, full localization support controllable at runtime, and the ability to dynamically extend API functionality using customizable plugins and extensions.

To ensure accessibility for screen reader and keyboard only users, the Automatic Accessibility Framework provides automated accessibility features for every AccDC Dynamic Content Object; including screen reader accessible hidden boundary text, ARIA Live Region markup, screen reader accessible hidden close links, strategic DOM insertion, strategic focus positioning, dynamically updating screen reader accessible hidden role and state text, automatic DOM refreshing for screen reader users, and additional accessibility properties and methods.

Whenever an AccDC Dynamic Content Object is opened or closed, automated maintenance and check routines are processed to prevent DOM cluttering, memory leaks, object conflicts, and performance degrading during prolonged activity.

### 1.1 Benefits

The AccDC Enterprise API saves time, costs, and resources by:

- Streamlining dynamic behavior related processes for development teams.
- Exposing property-controlled behavior switches for programmatic configuration.
- Providing flow-controlled processes for simple debugging.
- Supporting cross-browser compatibility for PC and mobile devices.
- Utilizing interchangeable component objects for easy code manageability.
- Automatically including accessibility features for screen reader and keyboard only users.

The AccDC Enterprise API utilizes the Cloud Computing model to instantly provide the most cutting edge processes in Rich Internet Application development.

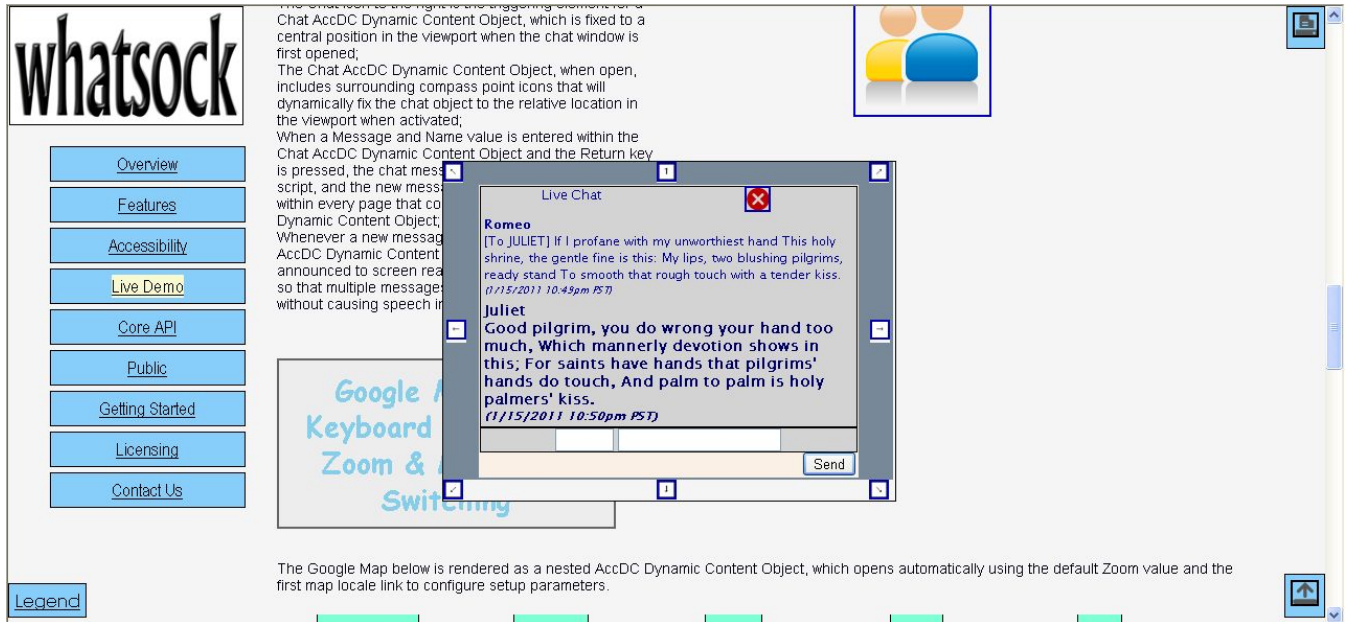


Figure 1: A dynamically generated chat dialog which includes automatic message announcement for screen reader users.

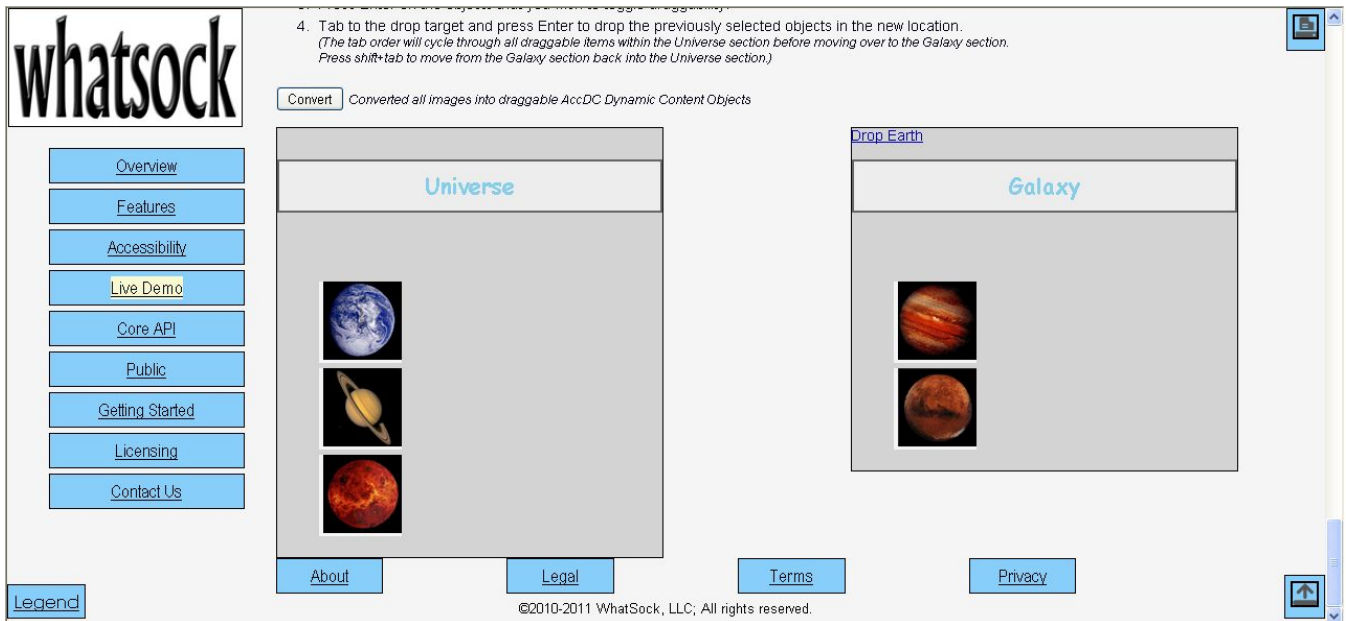


Figure 2: Dynamically generated AccDC Drag Controls with customizable drop zones which are automatically accessible to screen reader and keyboard only users when rendered.

The AccDC Enterprise API is used to create powerful, scalable, performance enhanced, resource efficient, automatically accessible Rich Internet Applications, with identical results for multiple development teams.

Rich Internet Applications are the way of the future for

providing feature rich, interactive user experiences for consumers in all markets and industries, and the AccDC Enterprise API is designed to be a platform where the future of automatically accessible Rich Internet Applications will grow and evolve into reality.