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and
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Turner Broadcasting System
CNN Digital Video Product Portfolio

CNNgo / TVE
Authenticated TV
Currently on CNN US desktop web site and mobile apps.

Video On-Demand
Including CNN US and International web and apps

Live Events
Planned & BN
From Bourdain to Boston, these are planned and breaking news events across all platforms

Syndication
Affiliate Content
CNN’s video affiliate and syndication network
What is CNNgo?

- Related content for each story
- Controllable ticker crawl
- "Linear" CNN network feed
- Social Media Sharing
- Breaking news notifications
- On-demand full episodes

Rundown for the full broadcast day
Walkthrough / Demo
The Thorny Problems

- **Security and authentication**
  - Video stream security
  - Application access

- **Time markup**
  - Show boundaries
  - Segment (story) boundaries

- **Related content**
  - Selection
  - Curation

- **Synchronization**
  - Video
  - Data

- **Video origination**
  - Ticker
  - Ancillary components
Video streams are AES-128 encrypted and played via Turner’s Core Video Player

Uses industry-standard TV- Everywhere authentication based upon OATC Standards

Server-side access is restricted by short-lived authorization tokens
Time Markup

Show boundaries

• Shows don’t necessarily begin at their scheduled time
• Show start is a function of the live control room

Segment (story) boundaries

• The CNNgo producer tags the start of each story.
Related Content

Multiple content sources

• CNN.com
• CNNMoney.com
• Bleacher Report (sports)
• Social Media
• Others

Multiple content types

• Articles
• Videos
• Images
• Image Galleries
• Social Media Content
• Interactive Content
Data and Video Synchronization

Video
- Time from master control is inserted into the video stream
- Television ad breaks are tagged for downstream dynamic ad insertion

Data
- All data related to the content is time stamped

But...
- Video doesn’t arrive in the client applications concurrent with the associated data
- Data generally leads video by 10-40 seconds
### Video Origination

<table>
<thead>
<tr>
<th>Video stream includes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Most downstream graphics from the TV feed</td>
</tr>
<tr>
<td>- Closed Captioning</td>
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<tr>
<td>- Nielsen watermarking</td>
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</table>

<table>
<thead>
<tr>
<th>CNNgo doesn’t use the TV on-screen ticker</th>
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<tbody>
<tr>
<td>- The ticker is removed and replaced with clean program video</td>
</tr>
</tbody>
</table>
Architectural Overview

Native implementations for each platform
- IOS (Ipad)
- Web
- Set top boxes

Key integrations
- Avid Inews editorial tools
- CNN’s Digital CMS
- Core Video Player