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Interactive video streaming for the web

VirtualView allows the creation of an interactive 3d point of view, by linking live video from Canon IP PTZ cameras to informations and web content (text, pictures, files, links, e-commerce systems..).

VV introduces a **completely novel feature**: real-time correlation between live scenes coming from the cameras and web content. Different content is shown to the user depending on what the camera is looking at. This is a decisive step up from traditional fixed-frame webcams, and also on pan-tilt-zoom cameras without dynamic contestual content associated. VV make web cameras interactive.

Tourism promotion – of a destination, a resort, a city... - is a **natural application of this platform**. This is also the main use of traditional webcams already installed and published on the web. The great majority of these is fixed (not PTZ or zoomable) and mainly not real-time but updated only every several seconds if not minutes. VV, using 16x optical zoom, allows web applications for promotion and marketing to make a decisive quality jump ahead and to give visitors an interactive and involving experience.

Museum websites are another example of a possible virtual point of view. Visitors can, operating the cameras, look freely at the exhibits and at the same time get detailed infos on them (e.g. author, year, history, related images, 3D objects or other content). We stress again that a site built around the VV platform offer live video streaming, not pre-recorded content, like other 3D technologies or “virtual visits”. Beside, visitors can use the real optical zoom of the cameras, limiting pixelating effects.

In **e-commerce applications**, VV can be deployed to build a **virtual show-room** where associated to products are description, prices, variants, 'add to basket' buttons, etc. This holds also for a site dedicated to the sales force, where agents can examine new products before the public.

Technical:

VV is a typical web application, based on standard LAMP technology: GNU/Linux OS, Apache web server, MySQL database server, with the use of Ajax for the User Interface. Being a web application, it does not need any software installation on users' computers: it can accessed via a normal browser. The platform was developed in collaboration with Canon, the famous camera manufacturer, who shared API details with us. The system does not need any computer or software at the camera site, just an Internet connection and a router.

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VirtualView: its two interfaces

Site administration interface:

This area can be accessed after an authentication and here the site admin can setup all the system configurations:

- number and type of active IP cameras; configuration of the cameras
- scenes associated to each camera
- content associated to each scene (text, images, prices, other...)
- advanced features like booking systems, e-commerce baskets etc

Public interface:

This is the interface seen by site visitors, of which an example can be seen below. Obviously the graphic appearance can be branded or personalized.
On the left of the screen the live video can be seen, and here are present all the tools used to operate the camera: slides for pan and tilt and zoom, shutter control.
On the right the content constantly updated according to the position of the camera. Visitors can take control of the camera (or be placed in queue) by clicking on the button.

The screenshot below is taken from the pilot project **www.cesenaticolive.it**, a touristic promotion site for a resort city in Italy.

Screenshot of the public interface

Some examples of other possible applications:

- Virtual show-rooms and e-commers applications (B2C or B2B)
- Museums, art galleries, exhibitions
- Fairs and events
- Destination marketing for communities, cities, resorts, hotels.
- Sport events
- Remote video help for industrial tools
- e-learning

Case Study: CesenaticoLive! (www.cesenaticolive.it)

This project was commissioned by the municipality of Cesenatico, a sea resort city on the Adriatic coast of Italy to promote on the web the city as a touristic destination. Beside the beaches and sea, Cesenatico hosts a 'live' maritime museum, where, on the ancient canal-port designed by Leonardo, examples of the work boats used during the age of sail are exhibit. The Museo della Marineria was the ideal set for a VV installation, giving for each boat a brief explanation of its origin and use, while the visitors virtually visit the open-air museum.

The project is completed by a second camera, installed on a tall building by the beach, a vantage point from which to look for miles on the beach and the hills behind the city.

The result: a cutting-edge touristic promotion site supplying visitors an interactive experience:
www.cesenaticolive.it

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