

Ci2i and CMS-TV - Generic web tools for CMS centres

The CMS Experiment at the LHC is establishing a global network of inter-connected "CMS Centres" for controls, operations and monitoring at CERN, Fermilab, DESY and a number of other sites in Asia, Europe, Russia, South America, and the USA. Here we describe the ci2i and CMS-TV Web systems designed to facilitate the operations of these Centres for CMS operations and outreach.

- **Contacts**
 - Gilles.Raymond@cern.ch
 - Lucas.Taylor@cern.ch
- **CMS Centre Web site**
 - <http://cmsdoc.cern.ch/cmscc/index.jsp>
- **How to build a CMS Centre @ My Institute (brochure)**
 - <http://cern.ch/lucas-nice/cms-centre/WWW/cms-centres-worldwide.pdf>
- **Papers**
 - L. Taylor et al., "Functions and Requirements of the CMS Centre at CERN", CMS NOTE-2007/010, 16 March 2007
 - L. Taylor et al., "CMS centres for control, monitoring, offline operations and prompt analysis" Proc. of CHEP'07, 2-7 Sept. 2007, Victoria; J. Phys: Conf. Series, Vol. 119, 2008.

<http://cmsdoc.cern.ch/cmscc/>



Ci2i

"ci2i" ("see eye to eye") is a generic Web tool for managing

- hundreds of displays screens in many locations
- monitoring content and mappings to displays
- CMS Centres' hardware configuration
- user login rights and group accounts
- screen shot services and
- operations planning tools.

CMS status displays are all Web-based. The URLs are registered in the ci2i system (Oracle database) together with the CMS Centre hardware configurations (consoles, PCs, screens, etc.), the users and groups, and their permissions. This permits the ci2i web interfaces to manage, operations such as:

- registration of new user in login group
- assignment of a physical console to a user group
- addition of a new URL (bookmark) to a group
- mapping a particular URL to a physical display, etc.

For example, the content on all 44 monitoring displays in the CMS Centre @ CERN may set from a single Web page.

Mapping URLs to Physical Displays

Firefox is automatically started in full screen mode on each PC (using one profile per screen), with a fixed URL

<http://cmsdoc.cern.ch/cmscc/ccconsole.jsp>

with hostname and display number as parameters. The Web server then looks up in ci2i, what URL the user has requested for this physical display and does a Web redirect such that the desired URL appears on the screen. The ci2i Web interface enables authorised users to change the URLs displayed.

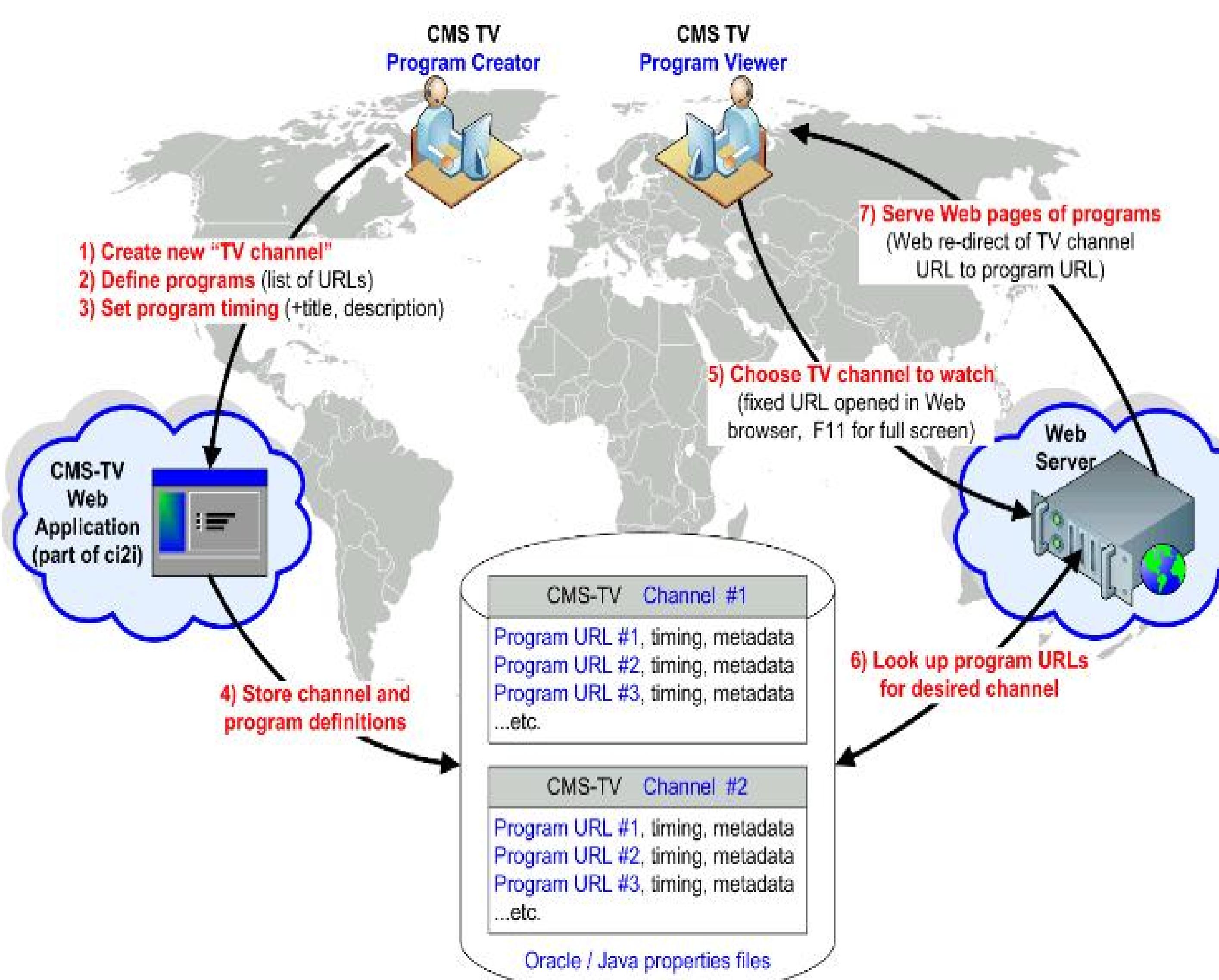
Location	Console	User	Hostname	Display	URL	Menu
oc_at_mumbai	desk01	hcal	ccmumba01	0	http://cmsdoc.cern.ch/cmscc/cmscc/cmvst.jsp?channel=6	no
oc_at_mumbai	desk01	hcal	ccmumba01	1	http://cmsdoc.cern.ch/cmscc/cmscc/cmvst.jsp?channel=2	yes
oc_at_mumbai	desk01	hcal	ccmumba01	2	http://cmsdoc.cern.ch/cmscc/cmscc/cmscc/cmvst.jsp?channel=4	no
oc_at_mumbai	desk01	hcal	ccmumba01	3	http://cmsdoc.cern.ch/cmscc/cmscc/cmscc/cmvst.jsp?channel=7	no
cms_centre	desk22	master	cms06	0	http://cmsdoc.cern.ch/cmscc/cmscc/cmvst.jsp?channel=4	no
cms_centre	desk22	master	cms06	1	http://cmsdoc.cern.ch/cmscc/cmscc/cmvst.jsp?channel=6	no
cms_centre	desk22	master	cms06	2	http://cmsdoc.cern.ch/cmscc/cmscc/cmvst.jsp?channel=2	no
oc_at_desy	desk21	visita	cms02	0	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk20	dqm	cms02	0	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk20	dqm	cms02	1	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk21	dqm	cms02	2	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk19	master	cms02	3	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk18	offic	cms02	4	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no
cms_centre	desk16	offic	cms02	5	http://cmsonline.cern.ch/daqStatusSCX/DAQmon/DAQstatusGre.jsp	no

CMS-TV

CMS-TV aggregates arbitrary (live) URLs into a cyclic program that can be watched full-screen in any Web browser.

"TV channels" can be trivially created and configured using the ci2i Web interface.

Url	tempo
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=ADE	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=LHC	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=CP5	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=LHC	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=CTF	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=LIN	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=LHC	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=P5B	5
<input type="checkbox"/> http://ab-dep-op.web.cern.ch/ab-dep-op/vistar.php?user=SPS	5



Users and Groups

ci2i manages users in groups which are then used to validate logins to a group account using personal user passwords (a customised pam_krb5, krb5.conf and .k5login have been established to support this).

each member of a group can manage a set of urls for this group

Other features

There are also many others features provided by management interface :

- restart a display
- remote display access (VNC)
- log actions
- start application instead of display url
- send e-mail to groups
- set the computing plan for the day

All desktops and displays are installed automatically via PXE kickstart.