A CMS for CMS ?
Preliminary views on Web Content Management Systems

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CMS Web Systems

❑ Internal Web pages and services

  ▪ **Organisation / projects:** people, management, institutes, plans, schedules, resources, secretariat …

  ▪ **Communications:** Email lists, news, blogs, meetings, videoconf. …

  ▪ **Documents & Publications** systems

  ▪ **CMS operations:** e-logs, user support, monitoring, SW dev. …

❑ External Web pages and services

  ▪ Scientists: papers, notes, contacts …

 ▪ The public/press: physics, photos, movies, educational resources …

Main Technologies

❑ Linux, Mac, (Windows)

❑ Apache, Tomcat

❑ Firefox, Safari, (others)

❑ html, css, PHP, Java, Python

❑ Twiki, Emacs, Dreamweaver

❑ Oracle, mySQL

❑ e-groups, Hypernews

❑ Indico, EVO

❑ CDS, DocDB, EDMS

❑ Twitter, YouTube

… and more …

Issue 1: Muddled CMS Web entry point(s)

❑ Too many CMS "Home Pages"
  ▪ With sub-optimal design & content

❑ Working on single CMS entry point branching out to
  ▪ Public Web site
  ▪ Collaboration Web site
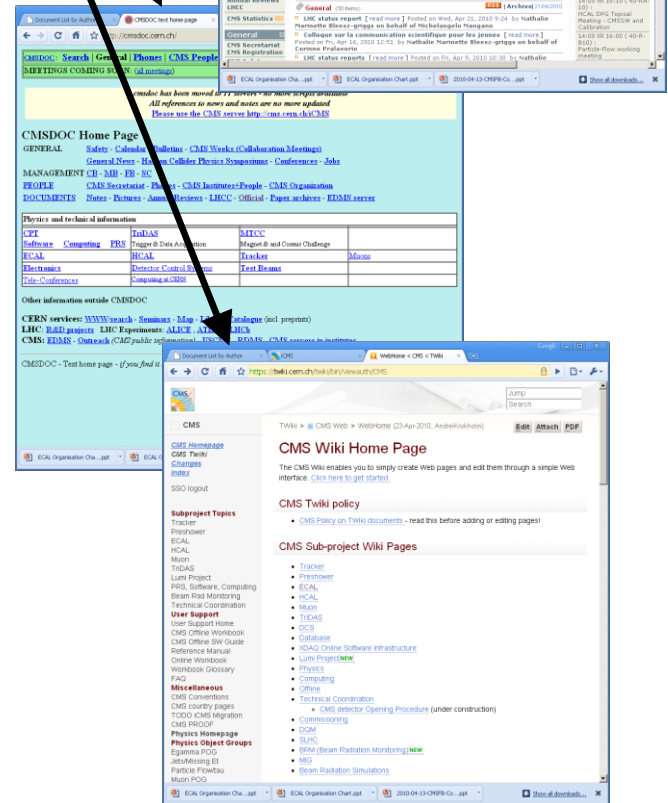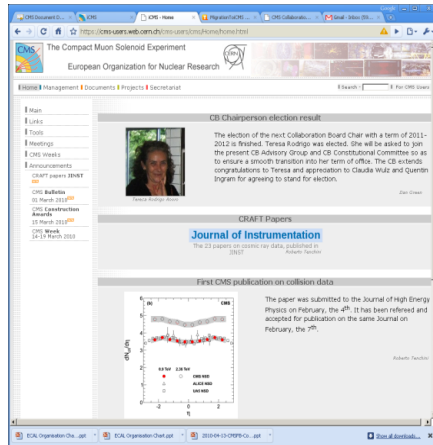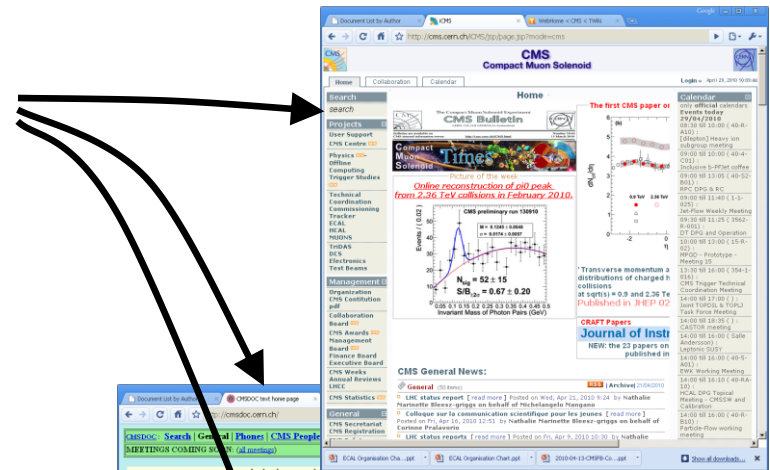
❑ Design, navigation and content still need a lot of work

Issue 2:   Too many sites. Poorly maintained.

❑ CMS is large, complex, distributed, diverse, and hard to manage

❑ There are 245 (!!) "official" CMS Web sites at CERN

| Type	Official	Personal	Test	Grand Total
AFS folder	51	7	11	69
Alias	43	8	3	54
Centrally hosted	107		6	113
Collaboration workspace	34		14	48
Java web application	3		2	5
NICE/DFS folder	1			1
Non-central web site	2			2
Redirection to a URL	4	1		5
Grand Total	245	16	36	297

 ▪ Plus the Twiki, and an unknown number of non-CERN sites

❑ CMS Web entropy is ever increasing
 ▪ It is (too!) easy to create new Web pages / sites
 ▪ Maintenance is boring, responsibilities are ill-defined

❑ Users do not have a culture of expecting good quality Web services. Resources are not made available.

Example: 32 different ECAL web sites at CERN

Web site ▼	Description ▼	Type ▼
http://cern.ch/cmsccecal	Common space for ECAL online prompt feedback analysis	Collaboration workspace
http://cern.ch/cms-ecal	CMS ECAL web site	AFS folder
http://cern.ch/cms-ecal-apd	Documentation and status regarding the production of avalanche photodiodes for the C	Centrally hosted
http://cern.ch/cms-ecal-conddb	CMS ECAL Conditions Database Project	Centrally hosted
http://cern.ch/cms-ecal-conditionsdb	CMS Ecal Conditions DataBase	Non-central web site
http://cern.ch/cms-ecal-cosmics	CMS Ecal cosmics data DQM	Non-central web site
http://cern.ch/cms-ecal-daq	CMS ECAL DAQ Software Website	Centrally hosted
http://cern.ch/cms-ecal-docs	Repository for selected important documents for the CMS ECAL subdetector	Centrally hosted
http://cern.ch/cms-ecal-ee-rc	Activity, useful information of Regional Center for assembly Endcap ECAL CMS at CERN	Centrally hosted
http://cern.ch/cms-ecal-elec	Photos an Drawings of CMS ECAL Electronics Components	Centrally hosted
http://cern.ch/cms-ecal-electronics-systems	Sharepoint of the CMS ECAL electronics systems group	Collaboration workspace
http://cern.ch/cms-ecal-laser	Provide information on the laser source for the CMS ECAL	AFS folder
http://cern.ch/cms-ecal-monitoring	Description and news on the monitoring system for CMS-ECAL	Centrally hosted
http://cern.ch/cms-ecal-optical-links	cms ecal datalinks	Centrally hosted
http://cern.ch/cms-ecal-papers	CMS ECAL Paper Editorial Board	Redirection to a URL
http://cern.ch/CMS-ECAL-RCCERNlab27	site pour l'activite de construction de CMS/ECAL dans le groupe EP-CMA	Centrally hosted
http://cern.ch/CMS-Ecal-Regionalcentres	site pour la construction de CMS ECAL	Centrally hosted
http://cern.ch/cms-ecal-share	CMS ECAL Project Sharepoint site	Collaboration workspace
http://cern.ch/cms-ee	Web site dedicated for ee status	Centrally hosted
http://cern.ch/cms-EE-info	CMS ECAL Endcap information and photos	Centrally hosted
http://cern.ch/cms-project-e0prime	CMS ECAL e0prime running in 2004	Centrally hosted
http://cern.ch/cms-project-ecal-electronics-integ	CMS ECAL electronics integration HOME page including project status informations	Redirection to a URL
http://cern.ch/cms-project-ecalmon	ECAL Laser monitoring	AFS folder
http://cern.ch/cms-project-ECAL-P5	Information about running ECAL at P5	Centrally hosted
http://cern.ch/cms-project-EE-movies	Movies of EE installation in CMS at point 5	Centrally hosted
http://cern.ch/cms-project-h4-testbeam-2004	Information for CMS ECAL testbeam 2004	Centrally hosted
http://cern.ch/cms-project-h4-testbeam-2006	Web site foe the ECAL 2006 TestBeam	Centrally hosted
http://cern.ch/cms-project-m0prime	cms ECal M0Prime group	Centrally hosted
http://cern.ch/cms-project-sm10-2004	CMS ECAL Info	Centrally hosted
http://cern.ch/cms-support-EE-connectors-mappi	ECAL EndCaps SuperCrystal connectivity	Centrally hosted
http://cern.ch/cms-support-ee-hvFilterCars	CMS EE hv filter cards statistics	Centrally hosted
http://cern.ch/CMSTestBeam	HCAL/ECAL Test Beam 2007 Web pages	Centrally hosted

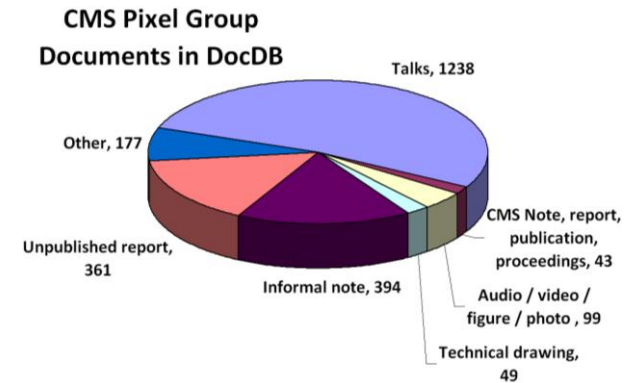# **Issue 3:** Incoherent tools, style, navigation

❑ No coherent choice of hosts

   ▪ Twiki, afs, Nice, sharepoint …

❑ No coherent style

   ▪ > 245 personal tastes

❑ Navigation is miserable

❑ There have been recent attempts to standardize more (header, sidebar, css)

   ▪ Well-motivated but still not enough (does not cover 244 of the 245 sites)

   ▪ Should we adopt a full Content Management System ?
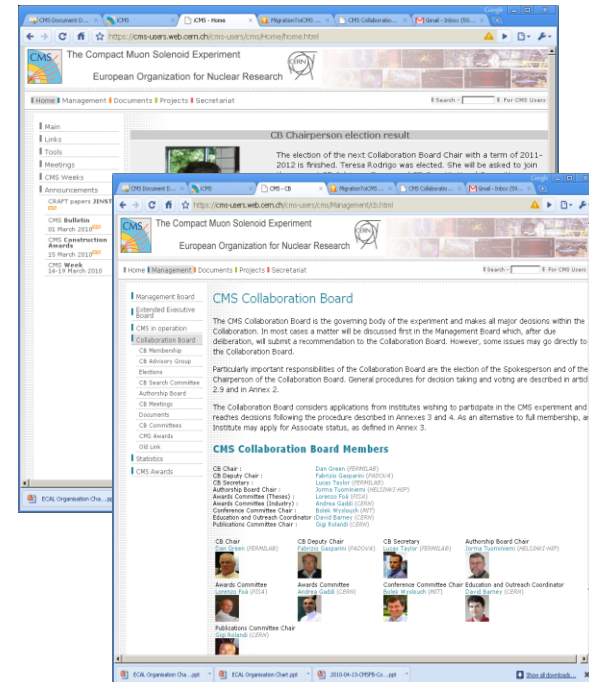
Issue 4: Many documents are not managed at all

❑ Estimate ~ 100k CMS documents so far, many informal but containing valuable knowledge

- ~50% already in iCMS, Indico, CDS, EDMS
- ~50% scattered about on various Web sites, private disks, etc.

❑ CMS recently started using DocDB to harvest these documents

- Fermilab product
- Running on CERN / IT systems
- Will integrate/migrate to iCMS + CDS in longer term

CMS Pixel Group Documents in DocDB

Talks, 1238
Other, 177
Unpublished report, 361
Informal note, 394
CMS Note, report, publication, proceedings, 43
Audio / video / figure / photo , 99
Technical drawing, 49

Estimate total CMS by extrapolation from Pixel group

Issue 5: Hard to find (correct) information

… as a result of issues 1-4 …

❑ It is very hard to find information
- CMS Web lacks a well-designed (navigable) structure
- No coherent search function for the many Web sites
- Even Google often fails – many pages are protected

❑ Much information of importance is duplicated, incomplete, out-of-date or plain wrong
- People often create new pages (esp. on the Twiki) because they cannot find existing ones or are not able to fix them
- Then the new pages slowly decay, being neither updated nor deleted

❑ As a result, CMS has poor access to its own knowledge base
- This leads to inefficiencies, reduced competitiveness, or even errors
- Longer term, we risk losing crucial CMS knowledge

Many other CMS Web issues …

❑ What is the right balance between rigorous management of content (quality) and individual freedom to edit content?

- ■ What do we do with Twiki? … easy to edit, hard to maintain
- ■ Is a "Content Management System" (CMS) appropriate?

❑ Can we integrate better our document preparation and publications systems (CADI, CINCO, CDS, TDR, docDB, etc.)?

❑ Calendar – can we have an integrated (shared) system?

❑ Can we benefit more from Web 2.0 for internal communications (blogs, Twitter, social networking, etc.)

❑ … and many others …

Next Step – Review CMS Web systems (June 2010)

❑ **Outcome**: written requirements and a strategy for all CMS Web systems, including recommendations of key technologies

❑ **Membership**: up to about a dozen people including

- CMS Head of Communications (Chair)
- Significant CMS "customers": Management, Physics Groups, Publications, Computing/Offline, Secretariat, Outreach
- CMS experts: iCMS developers, Webtools …
- External experts: e.g. CERN/IT, FNAL, ATLAS …

❑ **Modus Operandi**: dynamic sub-groups, e.g. "Content", "Design", "Technologies", etc.

❑ Review should explicitly address the potential role of Content Management Systems

Final remarks

❑ We clearly need more rigorous management of <u>all</u> CMS Web systems

- On a positive note, we have lots of low hanging fruit! I believe a Content Management System could really help (see outcome of CMS Web Review)

- We need CERN / IT to take a strong lead (taking acount of our input)

❑ Our biggest challenge is changing our culture

- Collectively we tolerate miserably low quality (why?)

- Individuals always know best and do not like constraints

    ▪ We are a collaboration, not a corporation

❑ We never cost the problem properly

- 3000 people waste time (hence money) with inadequate information and communications systems but web activities are always under-resourced

❑ We will need strong support from top management to successfully implement big changes and hence improve quality and efficiency

- Physicists will greatly appreciate improvements in the CMS knowledge base and communications systems (but will initially resent the increased rigour required to achieve this)