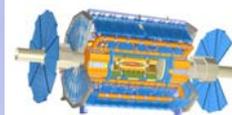




# The Use of the TWiki Web in ATLAS

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The ATLAS Experiment, with over 2000 collaborators, needs efficient and effective means of communicating information. The Collaboration has been using the TWiki Web at CERN for over three years and now has 7000 web pages, some of which are protected. This number greatly exceeds the number of "standard" or "static" HTML pages, and in the last year, there has been a significant migration to the TWiki.

## 1] Introduction

## 2] The ATLAS Experiment

The ATLAS Experiment is a huge particle physics experiment based at the CERN laboratory in Geneva, Switzerland. It sits on the Large Hadron Collider (LHC) accelerator which is designed to collide protons at an energy of 14 TeV every 25 ns. Over 2000 physicists work on the experiment, the aim of which is to understand the fundamental constituents of nature and how they interact. In particular, the experiment hopes to discover the Higgs boson – this is believed to be responsible for giving mass to matter. ATLAS is 46 m long and weighs 7,000 tonnes. The experiment is ready and looking forward to first collisions in 2009. See <http://atlas.ch/>



## 3] The TWiki

The TWiki is one example of the many different types of Wiki web which exist. "Wiki wiki" means "quick" in Hawaiian. The shuttle at Honolulu Airport is called the "Wiki wiki" bus, which is where the original Wiki web got its name. The best known example of a Wiki web is Wikipedia. TWiki was created by Peter Thoeny in 1998. "TWiki" is short for "TakeFive Wiki", the name of the company where Thoeny worked. TWiki is used by: Disney, British Telecom, SAP, Wind River, Motorola.

See <http://twiki.org/>



TWiki's parsing engine is written in Perl. It reads a text file, and converts TWiki text into standard HTML on the fly. Features include:

- Direct editing of pages directly through a web browser
- Easy syntax with basic style defined – produce pages with fairly uniform appearance (HTML can be used simultaneously, although this is largely discouraged)
- Easy linking by use of WikiWords: Words concatenated to form page names which can be linked, eg. *AtlasComputing*
- Revision control

The code is open source & freely available; the user community helps develop plugins.

CERN started using the TWiki in 1999. Most of the CERN TWiki can be viewed by anyone; however only CERN users registered with the TWiki can edit pages – this is handled by CERN's Single Sign-on protocol. See <https://twiki.cern.ch/twiki/bin/view/TWiki/TWikiSite>

## 4] The ATLAS TWiki

ATLAS has many "standard" or "static" web pages containing HTML, and the higher-level pages (portal pages) use the cascading style sheet (css) mechanism to format them.

ATLAS started using the TWiki in 2005. While the top ATLAS Web page <http://atlas.web.cern.ch/Atlas/> is in HTML, most of the new pages developed are now in the TWiki format. The two principle TWiki Webs in ATLAS are:

- *Atlas* – <https://twiki.cern.ch/twiki/bin/view/Atlas/WebHome> – public web, containing technical information about ATLAS
- *AtlasProtected* – private web, for physics preparations and results

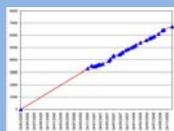
*AtlasProtected* is a new development in preparation for LHC data-taking. Once an ATLAS user is authenticated and authorised, there is no problem to move transparently between the two webs. It was a substantial amount of work to transfer files from the unprotected to the protected web: in particular to ensure that all the links were respected. It turned out that the TWiki tools were not well-suited to moving O(1600) pages and new tools had to be developed by CERN/IT Department.

The representation of TWiki pages is as a completely flat structure (single directory) on a linux server: each page corresponds to one file (accompanied by a CVS history file). The web links define a structure which is tree-like, although there are many cross-links and circular linkage. The TWiki system includes the concept of parents and this does provide a well-defined tree structure. Most pages are between 3 and 5 levels below the top page, going to 10 levels.

Top ATLAS TWiki page:



A standard TWiki feature is the LeftBar: for ATLAS, the LeftBars have been customised for each domain and then common LeftBars can be included for all pages within that domain.



Statistics for page creation:  
Create pages at uniform rate of 150/month.  
Start of 2009: 6700 pages.  
In last 3 (12) months:  
• 300 (1700) new pages created  
• 1300 (3400) pages have been modified

## 5] Managing the ATLAS TWiki

With 7000 web pages and 2000 collaborators, it is essential to manage the ATLAS TWiki else it can rapidly become chaotic with users readily able to create new pages.

Common problems include pages which:

- Don't obey the TWiki syntax (in particular the WikiWord syntax for the page name)
- Duplicate existing pages
- Contain rubbish
- Are not completed (perpetually "Work in progress")
- Become outdated/redundant
- Are not linked or don't have a correctly attributed parent

Despite rules and in some cases mechanisms to facilitate adherence to rules, physicists manage to bypass these. The TWiki is a garden which can rapidly grow out of control.



Tools for managing the ATLAS TWiki include

- Documentation reviews
- Monitoring day-by-day via "WikiMap" (see below) – this is constructed and cached every night
- Certification of good pages (see below)

It can be useful to run scripts directly on the page source files in the Linux file systems – this allows fast monitoring of the complete web and global modifications.

### Wikimap:

Includes ("red" cells indicate problems):

- Page name
- Owner
- Parent page & Linkage
- Dates
- Usage

### Certification:

To guide people as to whether the contents of a page are reliable, the information is up-to-date and the pages are of sufficient quality, pages can be given a dated "certificate" by an authorised, responsible person. 600 pages are currently certified, although certification is not appropriate for all pages.



## 6] WorkBooks



The TWiki is particularly well-suited to the creation of user manuals or "WorkBooks". These can be set out as with any web-based manual. What is particularly valuable is that all users can easily contribute to the upkeep and development.

To complement the electronic copy of the WorkBooks, a tool has been developed to create a printable pdf version, either for the whole Workbook or individual chapters or pages.

## 7] Some Problems

Problems encountered include:

- The garden readily becomes a jungle, requiring constant oversight.
- The search mechanism is weak, requiring the use of external tools.
- Flexible syntax for links: this allows URL's, links with mark-up `[[WikiWord|description]]` or just bare WikiWords (plus other permutations). This leads to some confusion and poorly constructed pages.
- In principle, WikiWords are nice, but the rules concerning their syntax is not well-adapted to the kinds of names appropriate in HEP experiments. Also clashes occur with words which are not intended to be WikiWords or are part of software constructs (file or path names).
- Some of the TWiki tools are not as robust as is desirable. In particular, (as with most webs), making major structural changes without damaging links is not easy.
- Large TWiki systems can become slow, requiring upgrades to servers. There are many more detailed issues in addition.

## 8] Conclusions

- The ATLAS Collaboration has enthusiastically embraced the TWiki.
  - The use of the TWiki is not without problems, in particular in its management ... and this has consequences for the users.
  - Nevertheless, the TWiki is very flexible and easy to use and its rapid growth demonstrates its popularity with the users.
- We would like to acknowledge the substantial help we have received from Pete Jones (CERN/IT).