EVALUATION OF ISSUE TRACKING AND PROJECT MANAGEMENT TOOLS FOR USE ACROSS ALL CSIRO RADIO TELESCOPES FACILITIES

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Motivation 1

Software Team Restructure

2012 and before: Two relatively independent software teams

ATNF Scientific Computing and Archives

ASKAP Computing

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ATNF Scientific Computing and Archives

ATNF IT

ASKAP Computing

ASKAP Digital
ASKAP SEIC
ASKAP ADE…

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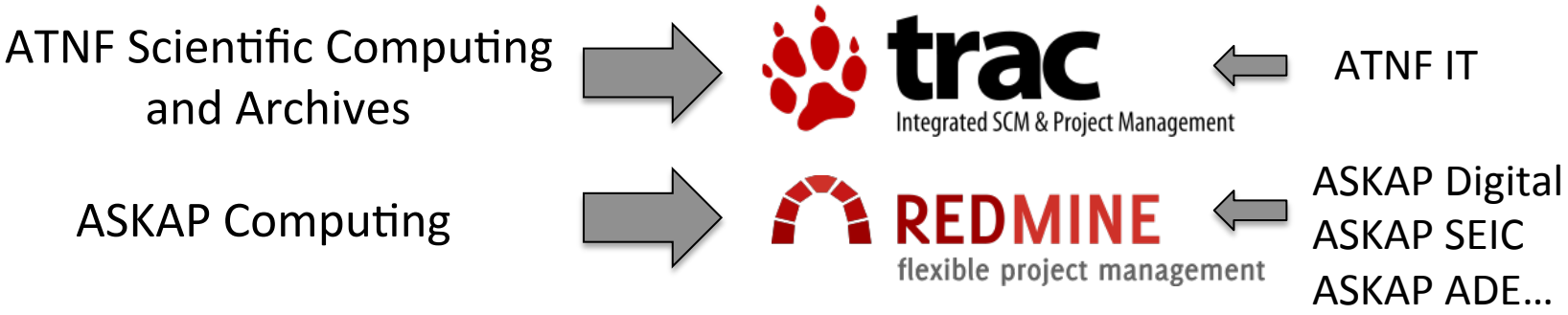

In early 2013, two software teams merged into single ATNF Software and Computing group, part of Operations

- Heterogeneous software maintenance and development processes and tools
- Some old software packages are “track by hand”

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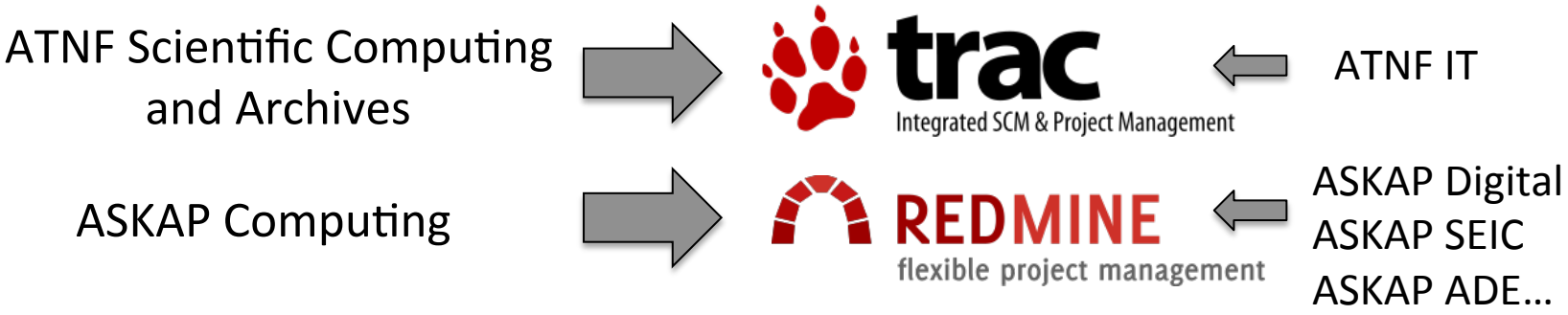

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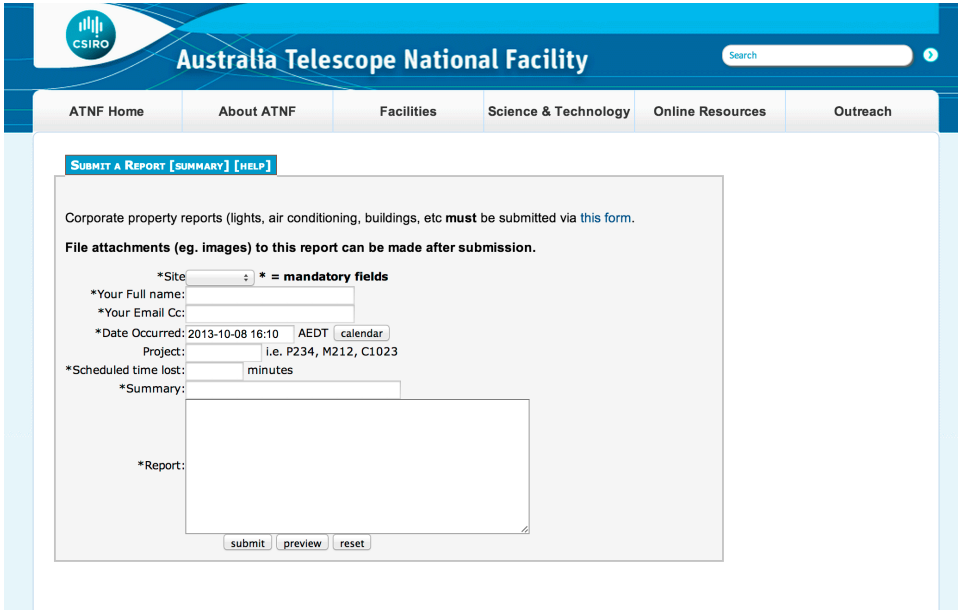
Goal: Homogenise processes and tools

Motivation 2

Upgrade of ATNF Fault Report System?

- Head of Engineering Operations asked for help to review the Fault Report System and evaluate alternatives.. Why?
- The ATNF Fault Report System
  - In-house development, running for 15 years (PHP/ MySQL)
  - Supports Parkes, ATCA and Mopra
  - Need to adapt to ASKAP and its operation model
  - Issues with categories, limited reporting and flexibility
  - Does not link with other issue-tracking systems



Requirements Analysis

Helpdesk/Support Tracking System

- Track Issues
- Email notification
- Support for watchers
- Multiple telescopes (or projects)
- Custom categories and sub-categories
- Custom fields
- Custom workflows
- Administration of users/ groups
- Access Security
- API
- Import from other issue tracking (CSV)
- Searching issues (common queries)
- Custom queries
- Basic reporting
- Custom reports
- Web-based UI
- Easy to use
- Easy to install/administer

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- Easy to use
- Easy to install/administer
- Integration with source VCS
- Code statistics/visualisation

Implementation Options

Many, many off-the-shelf Alternatives

FogBugz

JIRA

kayako

MANTIS

trac
Integrated SCM & Project Management

REDMINE
flexible project management

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…and many more in wikipedia

http://en.wikipedia.org/wiki/Comparison_of_issue_tracking_systems

Implementation Options

The shortlist

In use in other facilities and other CSIRO divisions

Already in use in ASKAP

Comparison Tests

- Analysed user documentation and books
- Play with JIRA 5.2 (trial version) and Redmine 2.3.2
  - Ask a couple of more developers to play with them
- Usability
  - Survey to Operations staff (in the context of Fault Report System), including playing with the tool without spending too much time
- Score on each category from (no weight):
  - 1 = not supported or don't like it
  - …
  - 5 = fully supported or feature is awesome

Comparison Results

- Result: JIRA 118, Redmine 109
- Differences and findings
  - JIRA provides support for sub-categories (up to two level). Redmine provides sub-categories via plugin (untested)
  - Redmine provides hierarchical project structure. JIRA only has two levels.
  - JIRA provides graphical workflow editor
  - JIRA has many built-in reports: user workload, version workload, time tracking, created vs resolved, etc. Redmine only provides time spent report
  - JIRA provides better documentation on how to create custom reports
  - Slight preference in terms of UI of JIRA compared with Redmine
  - Add-on JIRA FishEye provides more code statistics and nicer visualisation. There might be Redmine plugins that add on similar functionality (unverified)

Recommendation

- Replace Fault Report System with off-the-shelf issue tracking
  - JIRA is (slightly) more user friendly than Redmine
  - JIRA has a larger use base, including several large physics facilities
  - JIRA has better record as a Helpdesk/Support system compared to Redmine
  - Using JIRA is less riskier than using Redmine
- Evaluation report (internal) in the context of the Fault Report System only, released to the Operations staff for consultation in Sep 2013
- Are you using JIRA now? What happened to Redmine?

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- Are you using JIRA now? What happened to Redmine?
  - Not implementing it yet
  - Updating the report with comments I received + add analysis of impact on other projects
  - Decision by end of October 2013
  - Driving change is difficult and challenging… get staff involved

Conclusions

- Use an issue tracking tool, it will make your life easier both as a developer and manager, especially in medium to large teams
- Single project, small team, open source “fundamentalist” and/or very little budget
  - Consider Trac (or others)
- Multiple project, small team (< 5), open source “fundamentalist” or very little budget
  - Consider Redmine
- Multiple project, medium to large team (distributed geographically), don’t mind spending a modest license fee
  - Consider JIRA, Confluence for wiki, FishEye for code visualisation

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Remember: These are just suggestions/views from the author
Use it at your own risk

Thank you
and see you in Melbourne 2015!

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