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  →  trac

ASKAP Computing  →  REDMINE

Flexible project management
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ATNF Scientific Computing and Archives

ASKAP Computing

ATNF IT

ASKAP Digital
ASKAP SEIC
ASKAP ADE...
Motivation 1
Software Team Restructure

2012 and before: Two relatively independent software teams

ATNF Scientific Computing and Archives → trac Integrated SCM & Project Management
ASKAP Computing → REDMINE flexible project management

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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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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- Web-based UI
- Easy to use
- Easy to install/administer
- Integration with source VCS
- Code statistics/visualisation
Implementation Options
Many, many off-the-shelf Alternatives
Implementation Options
Many, many off-the-shelf Alternatives

...and many more in wikipedia
Implementation Options

The shortlist

- JIRA: In use in other facilities and other CSIRO divisions
- REDMINE: 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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