# INFRASTRUCTURE

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| Programme Budget (Start of Year) | 652 |
| Project Days Delivered | 512 |
| Project Days Delivered vs Budget |  78% |
| Projects To Complete (Start of Year) | 4 |
| Projects Delivered | 3 |
| Projects Withdrawn  | 0 |
| In Year Projects | 0 |
| ***Project Completion Rate (Excluding Withdrawn and In Year Projects)*** | ***75%*** |

# Summary

# The INF programme had no carry over from previous year, and so with over a 100 days contingency was in a strong position from the outset.

# There were four projects projected to complete within the year, and two more planned to start in 2014/15 and continue into 2015/16. Respectively:

* New Application Tier Replacement (INF106)
* Environment Monitoring System Assessment (INF107)
* Automated Server Builds (INF108)
* Annual Upgrades of Development Tools (INF109)
and
* Decommission Obsolete Infrastructure (INF105)
* Environment Monitoring System – Procurement / Implementation

# The programme has delivered three of the four projects as expected, with INF108 delivering its recommendation report now in August.

# INF105 is running into 15/16 as planned, but there was a delay on getting the Environment Monitoring System follow up project started, and which will now start in 2015/16.

Most of the contingency was returned to the ISG Portfolio.

However, the programme has been able to start three of the planned 2015/16 projects in the current year, so putting the programme on a strong start to the new year and moving to a model of a continuous three year cycle.

* Install Oracle 12c
* New SQL Server DB Tier Replacement
* Build and Configure New Coldfusion Version

# In addition to project delivery, the programme has shown IS Applications collaborating successfully on the INF107 project, and also has given Dev Tech the chance to manage small, focussed projects such as INF109 which have been successful.

# As detailed above, the programme delivered projects, providing improved architecture, processes and tools to underpin our services.

# INF106 - New Application Tier ReplacementThis provided a new infrastructure for the application tier, implementing the recommendations of the 13/14 INF104 project. This was a skeleton framework, implemented to support the application tier going forward and to underpin any new developments in the application tier across business areas.

# The main benefits delivered were:

* Cost Reduction - reduced numbers of physical infrastructure to manage / reduced hardware maintenance costs because of a lower number of physical servers.
* Consolidation - ability to increase the space utilisation efficiency in the data center and move resources to where they can most do the work.
* Consistency - ability to develop a standard virtual server build that can be easily duplicated which will speed up server deployment.
* Capability - ability to deploy multiple operating system technologies on a single hardware platform (i.e. Windows Server 2003, Linux, Windows 2000, etc).

**INF107 - Environment Monitoring System - Assessment**This project set out to identify Academic institutions who have similar infrastructure and architecture to that running in Edinburgh University and who have also implemented solutions that deliver the key benefits we have identified in the appraisal.

This project would make a recommendation based on the findings from the visits and any other R&D undertaken in support, outlining what subsequent projects would do to deliver.

As it turned out, the project team recommended using an incumbent tool – SCOM – to underpin an

Organisational Change in the way services are monitored and maintained.

2015/16 will see a project to Pilot both SCOM and the Organisational Change (new roles) for a number of Services, before fuller adoption of tool and process.

**INF108 - Automated Server Builds (not closed)**Infrastructure configuration has traditionally been carried out by hand. This has had the unfortunate side effect of introducing unintentional differences in the builds of different machines. These differences are frequently the source of unreliability or failure in the infrastructure, and a means of automating builds should reduce or overcome these problems.

Automation tools would provide a more agile means of provisioning servers and services on servers to make delivery more efficient and consistent. It would also provide more options in the event of a system corruption or disaster, providing the means to rebuild and restore services more quickly.

ITI and Applications are in agreement that moving to a DevOps environment would be greatly beneficial to all parties, being both more efficient and elegant. This requires a sea change in working from both ITI and Applications and will require buy-in from senior management in both divisions.

The project will deliver the following benefits to ITI and IS Applications:

* Rapid deployment of technology
* Reduced deployment costs
* Reduced inaccuracies in system builds
* Increased build repeatability
* Increased confidence in using configuration management tools
* Reduced total costs of system builds
* Rapid recovery to previous state
* Reduced support costs to IS Apps and IS ITI
* Support for high scalability

The technologies have been delivered, and only the final report with recommendations for IT and Apps remains to complete and be approved. Expected to close project by end of August.

**INF109 - Annual upgrades of development tools (JIRA/Bamboo)**The Division has built up reliance on a number of key products over the years to assist in project and service delivery. This project upgraded these products as required.

JIRA

JIRA Agile

Bamboo

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