



Access Rights Management and Version Control in an Independent Programming Environment

Introduction



Right
First
Time



Regulate
Access



Version
Control

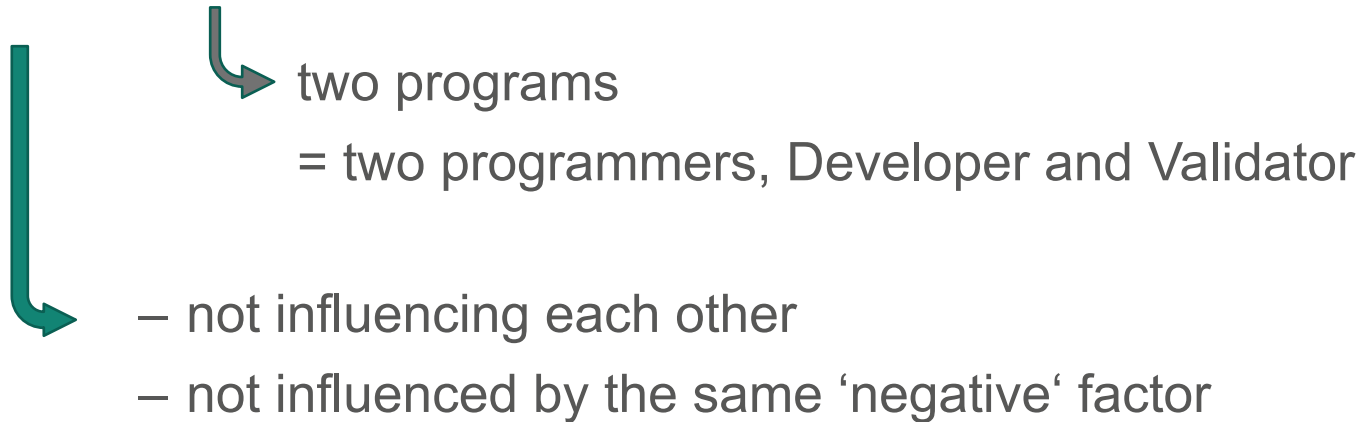
Why don't we achieve error free results at the first attempt?

Agenda

- Introduction
- Independent Double Programming
 - What is it?
 - Scenarios not working
 - Possible solutions
- Independent Programming Environment
 - Without Version Control
 - With Version Control
- Access Rights Management:
The Data Governance Portal at ICON

Independent Double Programming

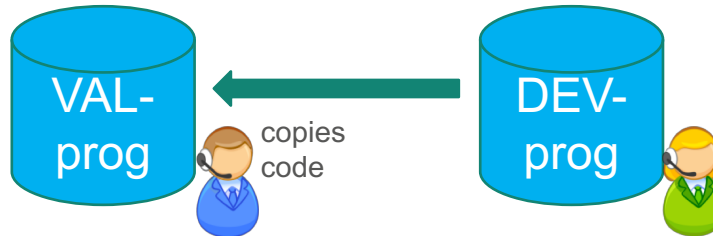
Independent Double Programming

- 
- The diagram illustrates the concept of Independent Double Programming. It features a large teal arrow pointing downwards from the title to a list of characteristics. A smaller teal arrow points from the title to the text 'two programs = two programmers, Developer and Validator'.
- two programs
= two programmers, Developer and Validator
 - not influencing each other
 - not influenced by the same 'negative' factor

Scenario 1

- The Horror ‘Code Copying’ Scenario
 - ‘Validator A’ copies the programs of a developer and modifies them to look like his own.

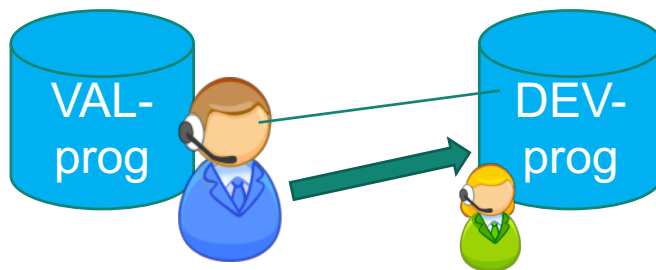
Why? Time or skillset constraints e.g. ‘Validator A’ was assigned to multiple studies with conflicting due dates but no concern regarding workload was raised.



Scenario 2

- The ‘Bad Influence’ Scenario
 - ‘Validator A’ reviewed the source code of ‘Developer B’.
 - ‘Validator A’ advises ‘Developer B’ to update his code to produce the same value.

Why? ‘Developer B’ updates his code because he thinks he is less experienced.
 ‘Developer B’ does not want to jeopardize their personal relationship.



Scenario 3

- The ‘Error Jump’ Scenario
 - ‘Validator A’ copies the source code of ‘Validator B’.
 - The copied code has a logical deficiency not recognized by ‘Validator A’.
 - ‘Validator A’ uses the defective code for a program with the same defect where B is developer.

Why? ‘Validator A’ assumes correctness of existing code.
With ‘B’ being developer and validator the error jumps over.



Scenario 4

- The ‘External Effect’ Scenario
 - ‘Validator A’ and ‘Developer B’ had the same training regarding a statistical method
 - ‘Validator A’ and ‘Developer B’ use the source code provided in that training but the training material contained a typo.

Why? Incorrect training material / reliance on external material.



Scenario 5

- The ‘One Source’ Scenario
 - ‘Validator A’ and ‘Developer B’ do not match in their assumptions.
 - They go back to the lead programmer or statistician to query and get the directive on what the assumption should be.
 - Both implement this assumption.
 - The assumption made is incorrect.



Why? A single decision maker is subject to human error and
so the independence within the process is easily violated.

Possible Solutions

1. Disable the ability to copy or visually inspect code belonging to other roles

➡ Scenario 1, 2

2. Allow a programmer to have only one role within a study

➡ Scenario 3

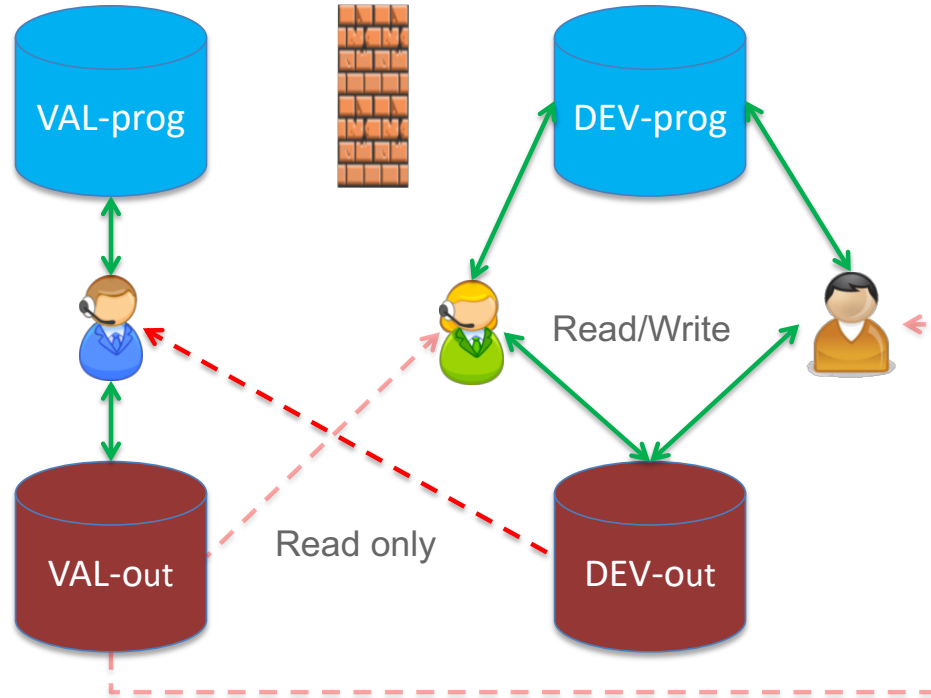
3. Report findings and responses in a central repository

➡ Scenario 2, 5

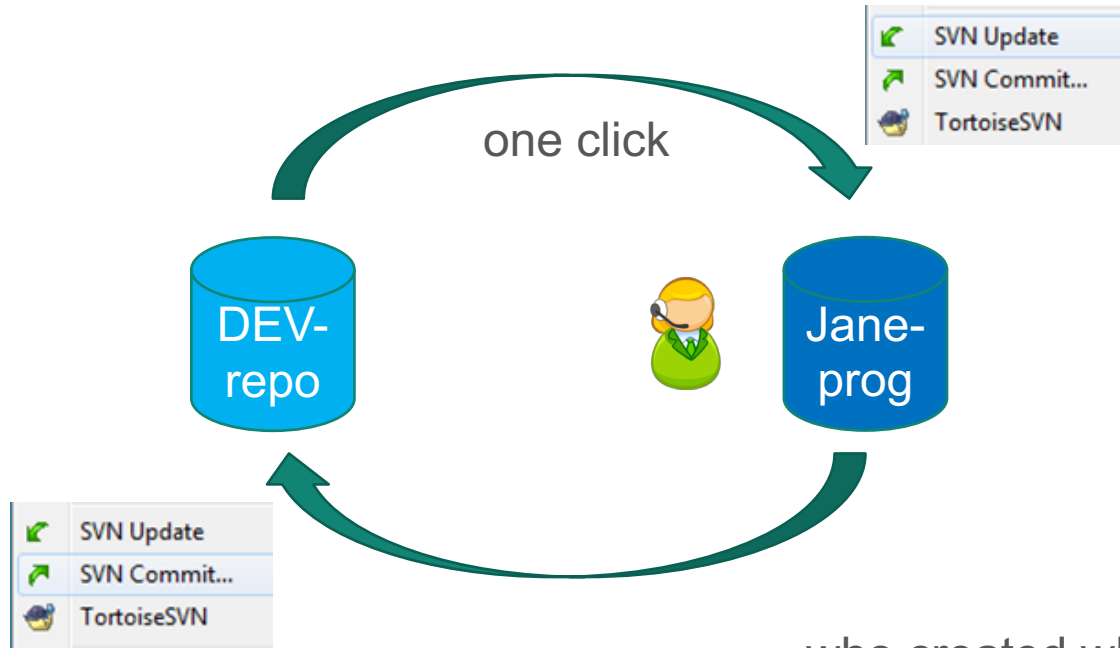
– Consider anonymized roles ?

➡ Scenario 2

Independent Programming Environment (without Version Control)

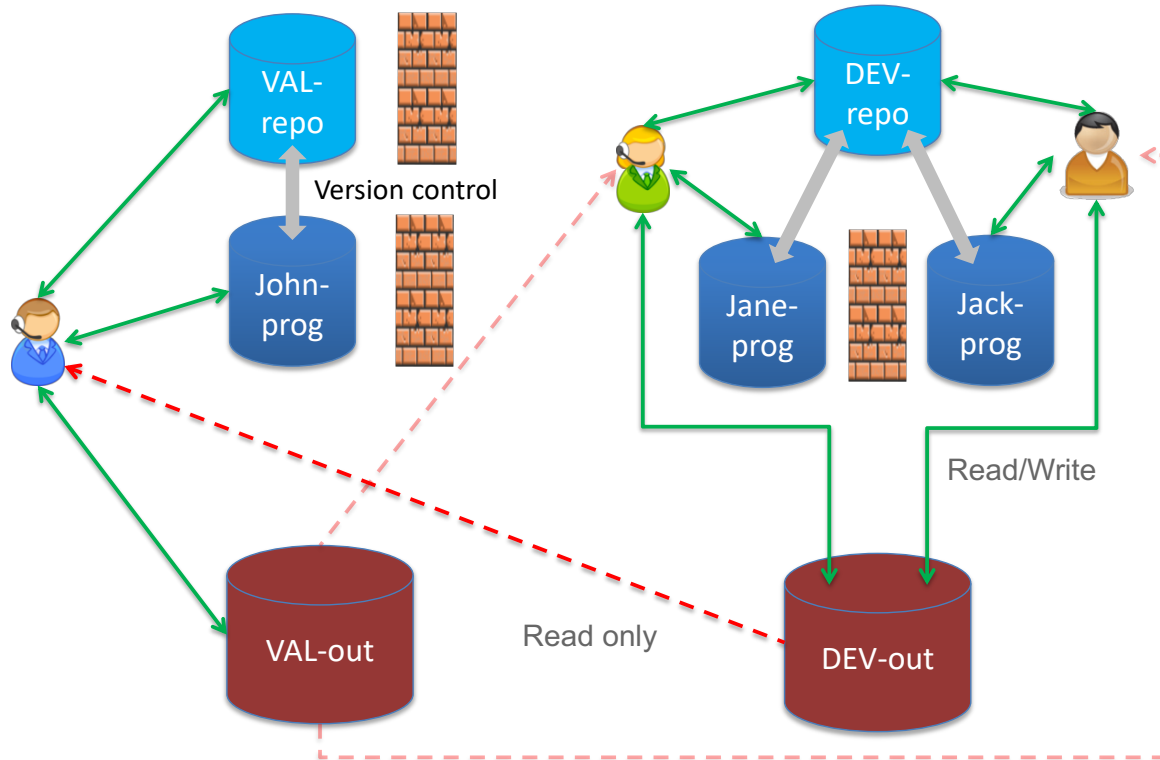


Version Control



- who created when which version
- access to each version / change

Independent Programming Environment (with Version Control)



Access Rights Management

 **Data Governance Portal**
A Symbol of Excellence Version 2.0

-  Request a project directory
-  Create a project directory
-  Delete a project directory
-  Request access
-  Grant access
-  Approve a request
-  Change owner
-  Delegate approval
-  Attest access
-  Archive a deliverable
-  Reports

ICON Data Governance

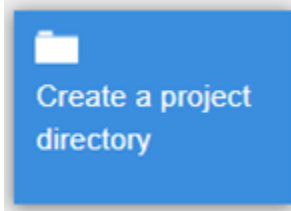
Welcome to the ICON data governance portal

 Create a project directory

 Request access to a directory

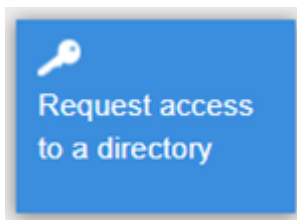
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Access Rights Management – Study Setup



- File server folders per role
- Version control repositories per role
- Access rights groups per role (empty)
- Data owner

Access Rights Management – Access Request



Icon Data Governance

Dear Sachara, Christian,

An approval action for an access request has been assigned to you.

Requested By: **Sachara, Christian**
Access To: **ICR BioStatistics SAS EU 8888-0001 Dev**
Owner: **Sachara, Christian**
Owner's Manager: **McGuirk, Jennie**

Click here to view the details and approve the request: <http://data-governance/SasIcrBioApproval/Details/44506>

Access Rights Management – Access Approval



Icon Data Governance

Dear Sachara, Christian,

You have been granted access to **ICR Biostatistics SAS Project Directory 8888-9876 SVNTEST Val**.

The owner of this directory is [Sachara, Christian](#)

Below is the path to the project directory.

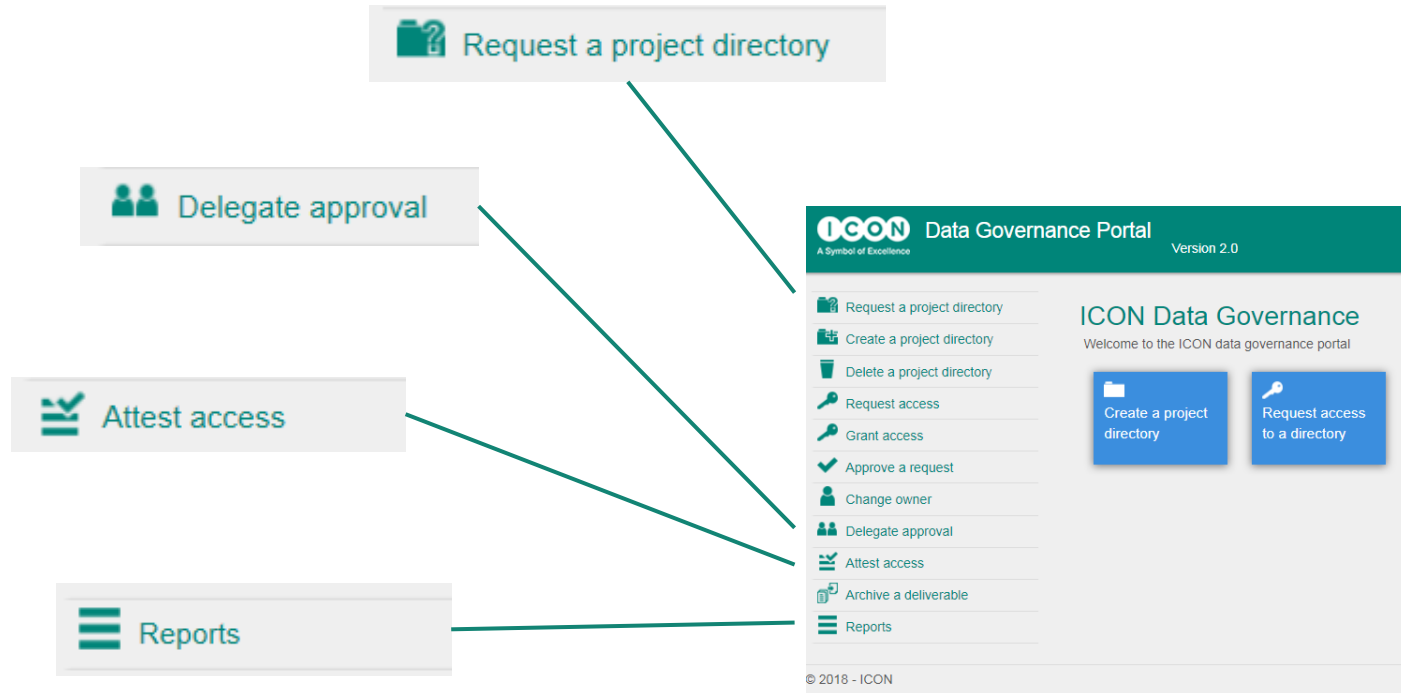
[\\dub-filer-02\sas_icr_bio_eu\test\project\8888\SVNTEST\9876\icr_bio\val](#)

Below is the path to the SVN repository.

https://am-sassvnd-a001.iconcr.com/svn/bp_EU_8888_svntest_9876_Val/

You might have to wait 15 minutes, log off and log back in for the access to have effect.

Access Rights Management – More Features



Recommendation

Don't take things as given,
a critical look from time to time helps.

Don't underestimate the effect
of personal relationship and human interaction.

Search for simple technical solutions.

Thank you

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