

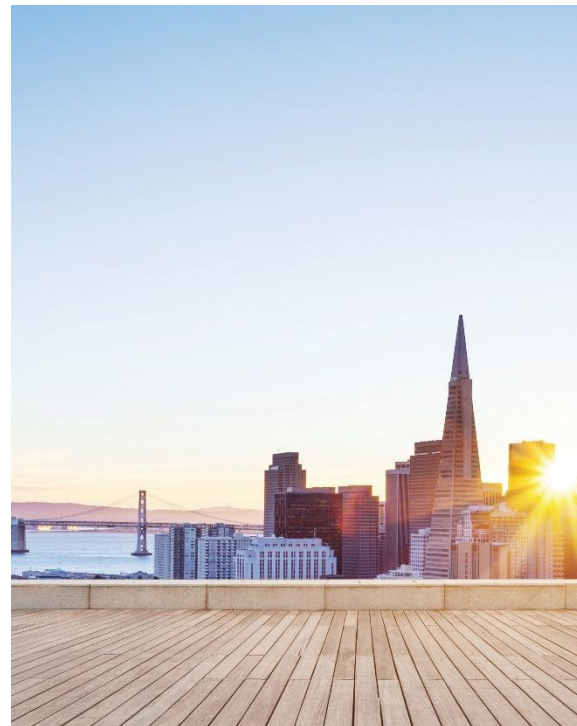
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Eiffel Summit 2021 Source-code Events

Sven Selberg

Who is Sven Selberg

- > SCM Team lead @ Axis Communications
- > 9+ years in SCM space
 - git
 - Gerrit
- > Gerrit maintainer



Vocabulary

- > Source code state
 - Snapshot of source-code file-tree
- > Source code delta
 - Difference between two Source-code states [git commit]
- > Mutable source code definition
 - Label describing an (open-ended) series of Source-code deltas [git branch]
- > Immutable source code definition
 - Label describing a Source-code state [git tag]

Background

Full commit DAG in Eiffel, why?

- > Tracing.
 - There's my commit!
- > Tracking relationship between source-code states.
 - Which commits are on branch-a but not on branch-b?
- > Not possible to back-fill links in existing events.

Current event structure

Current SCM Events

> SourceChangeCreated

- Pre-integration stage source-code delta created.
- [git] Relationship between commit and target branch.
- [Gerrit] patchset-created

> SourceChangeSubmitted

- Integration of SCC into target mutable source-code definition.
- [git] Relationship between commit and branch.
- [Gerrit] change-merged

Current structure (git perspective)

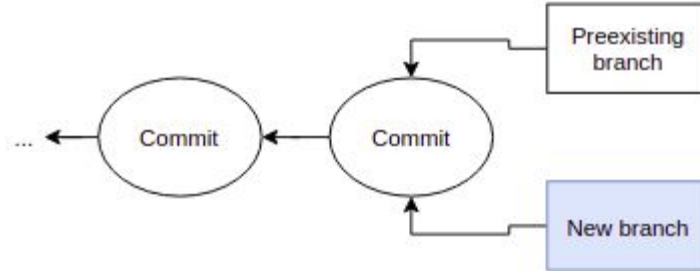
- > Inept at describing source-code lifecycle
 - Implied review-step (SCC) mandatory.
 - No shared ancestry between branches.
 - No concept of immutable references (i.e. tags).

Implied review step

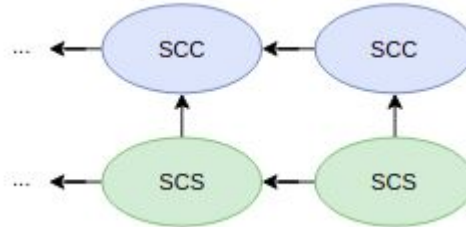
- > Mandatory SCS link forces creation of nonsensical SCC on:
 - Delivery from upstream.
 - Merges
 - ...

No shared ancestry (performance/storage)

> git [$O(1)$]



> Eiffel [$O(2*n)$]



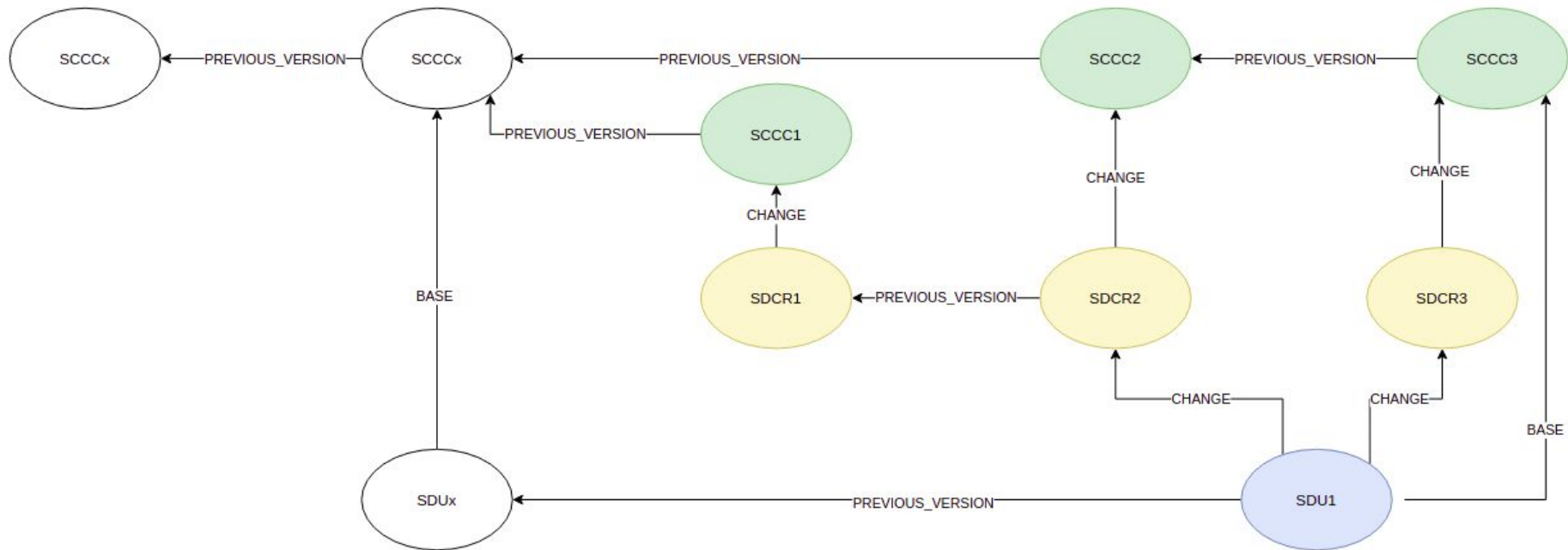
No concept of immutable references

- > Currently modelled with 2 unsuitable(?) events
 - CompositionDefined
 - ArtifactCreated

New event structure proposition

What to model

- > SC delta introduced
 - git: New commit available
- > Mutable SC definition updated
 - git: Branch updated
- > Mutable SC definition change-request created
 - git: Gerrit change, Github PR, Gitlab MR ...
- > Immutable SC definition created
 - git: Tag created



SCCC: SourceCodeChangeCreated
SDCR: SourceDefinitionChangeRequest
SDU : SourceDefinitionUpdated



THANK YOU