Merge tool – Merge of changes in state machine causes for an incoming transition to became orphaned

Keywords: git, compare and merge, merge-tool, state machine

SW version info:

- BridgePoint 4.1.0.
- Egit 2.3.1.201302201838-r

Description

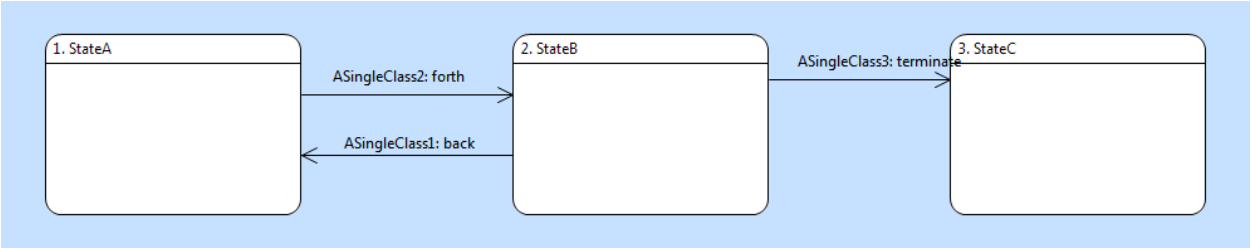
When performing merge operations on a state machine diagram, merge operation using a merge tool results in a transition becoming an orphaned one.

In the scenario that brings up this issue we compare state machine diagram that is modified in two branches. In the branch "slave" we add a transition between states that exists in both branches (previously). However, merge tool incorrectly shows two incoming changes; one being a newly added transition with a event and second being a "can't happen" specification for the transition in the state.

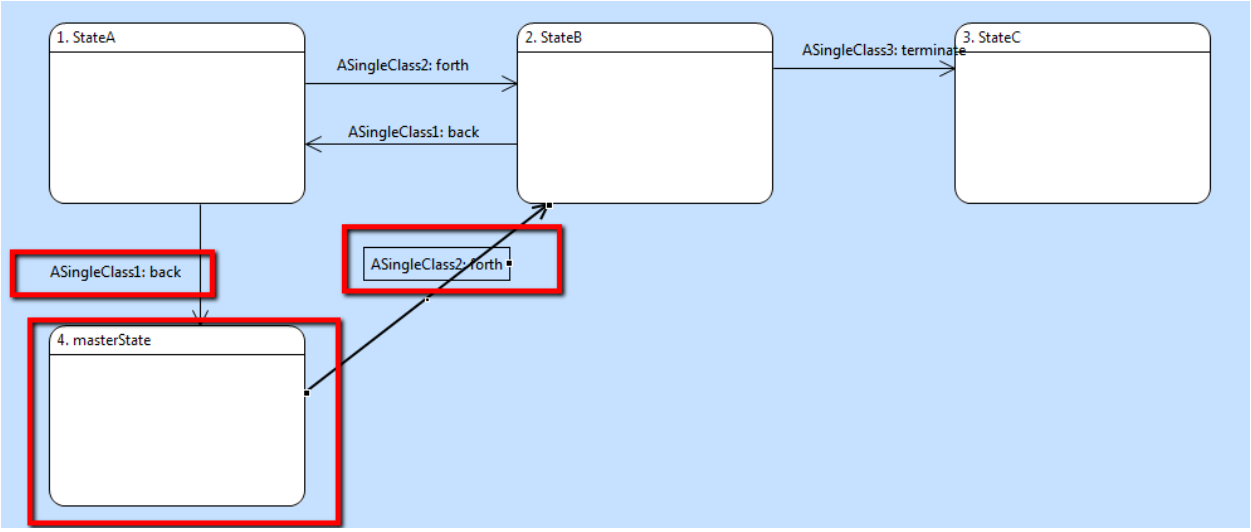
Finally, whatever scenario we try in the merge tool, the newly added event transition from the "slave" branch" will become orphaned in the merge process.

Details:

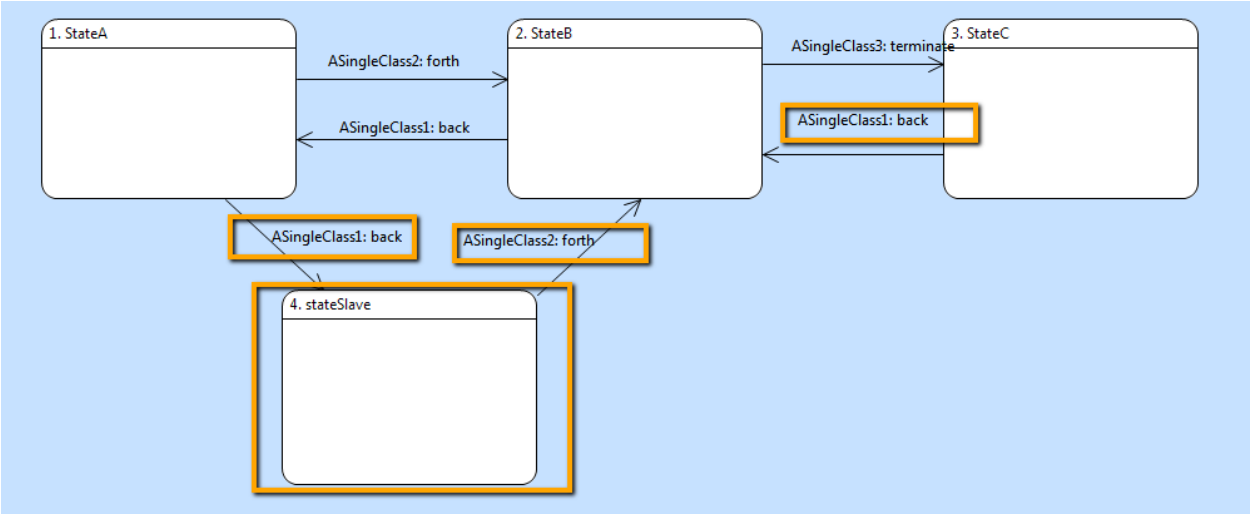
This is the initial state machine;



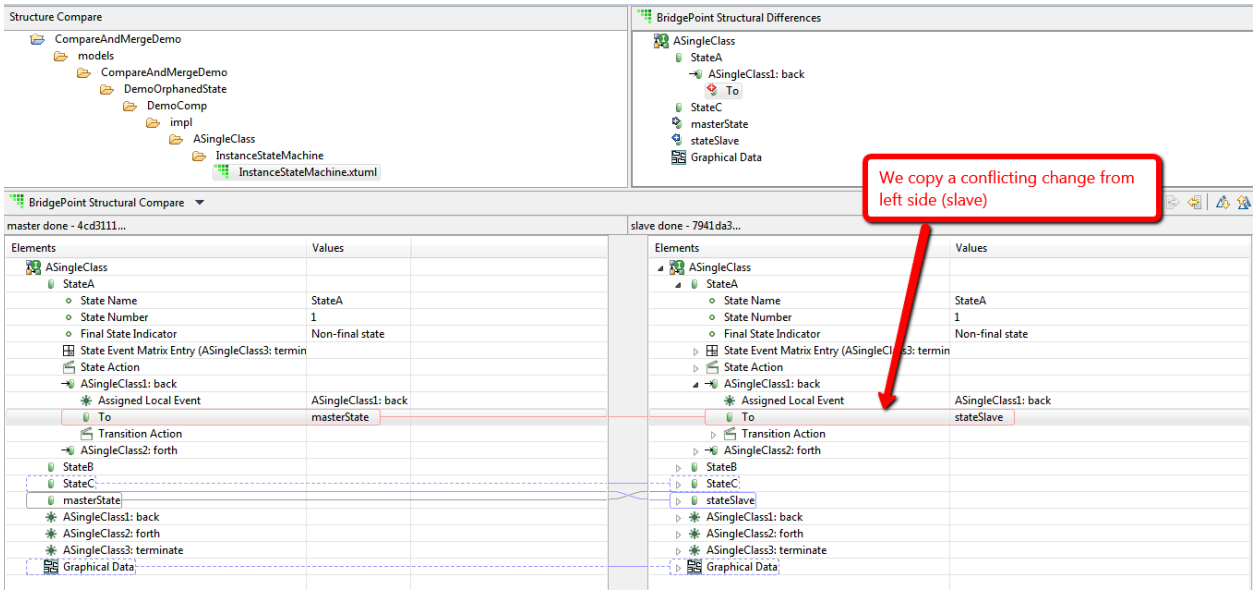
Changes done in the master branch:



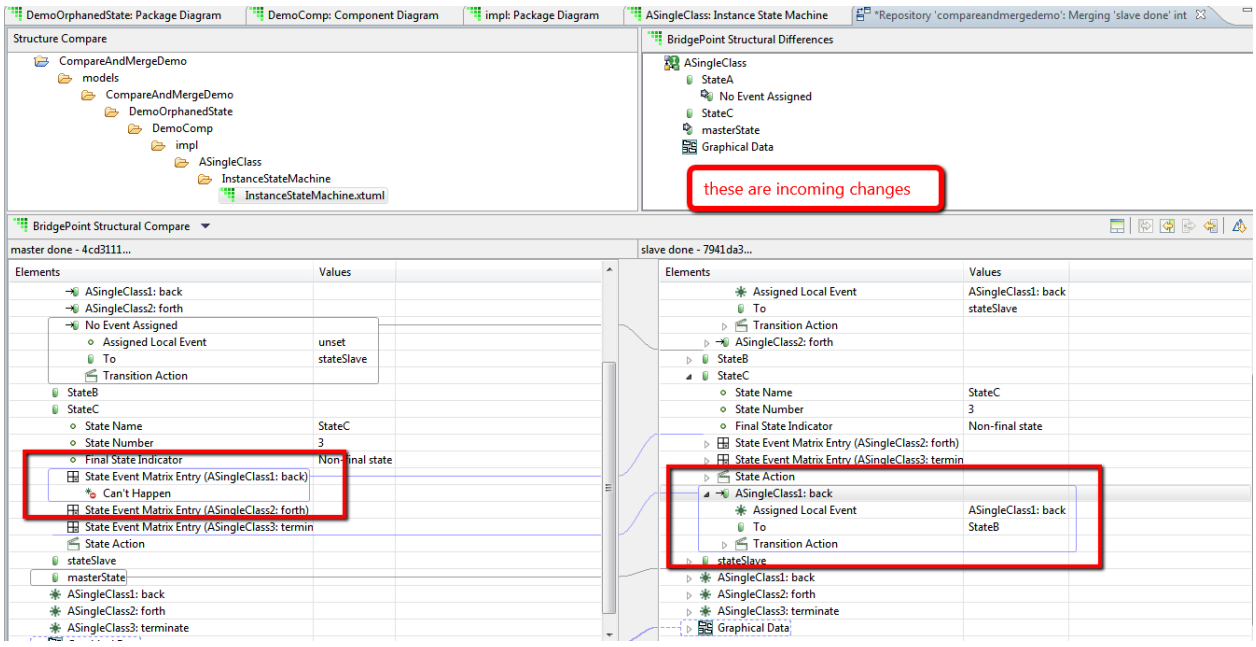
Changes done in the slave branch



We perform merge slave into master



After choosing the conflicting change from right (slave) the merge tool changes to following.



We see that there are two incoming changes reported regarding the transition from state C:

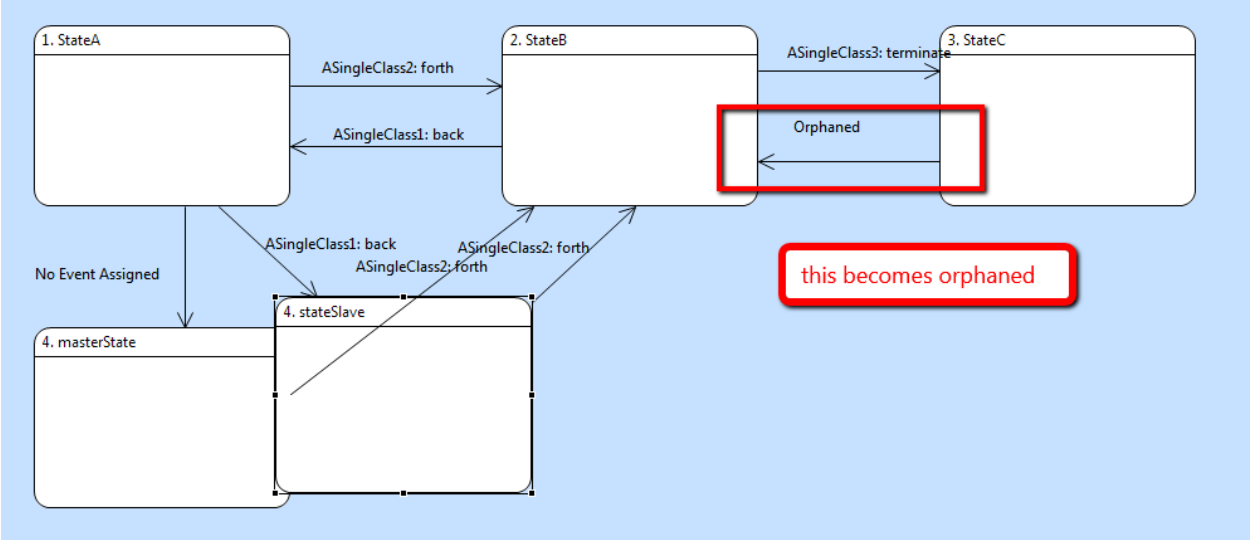
- In one on the left side, present in the master, this is acknowledged as "Can't happen"
- In second on the right side, present in the slave, this is acknowledged as event generated transition – event being a "Back"

This is incorrect according to my understanding.

Anyway, whatever scenario we follow from this point on, we will get the same result – for example:

- We copy all non-conflicting changes to the left (even before we resolve the conflict)
- If we copy event "Back", i.e. incoming change on the right, to the left, and then copy all non-conflicting changes, then initial incoming change (event) reappears on the right as an incoming change– which is strange.
- If we copy "Can't happen" event which is annotated as incoming and shown on the left, then we are unable to copy the incoming change on the right (event "Back"; the copy to left does not do anything) - which is strange.

As stated before, in any of the scenarios, an incoming change from slave branch – a transition from StateC to StateB with an event "Back" becomes completely unnecessarily orphaned.



Attachment:

Git repository with the state prior to merge of branch "slave" into branch "master". State machine diagram is in the following path:

CompareAndMergeDemo:DemoOrphanedState::DemoComp::impl::ASingleClass