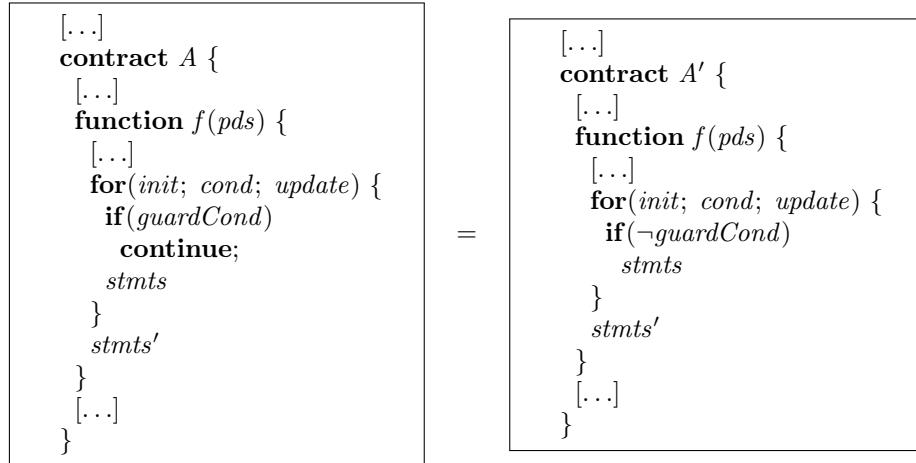

Rule 0.30 *(Redundant Control Flow Removal (Continue))*



where

guardCond is a boolean condition that guards the execution of *stmts*;
stmts represents the statements in the loop body that should be conditionally executed;
init, *cond*, and *update* are the loop initialization, condition, and update expressions;
stmts' represents statements following the loop;
 $\neg \text{guardCond}$ denotes the logical negation of *guardCond*.

provided

The **continue** statement is immediately executed when *guardCond* is true;
No statements exist after *stmts* and before the end of the loop iteration;
guardCond has no side effects;
stmts does not modify variables used in *guardCond* in a way that would affect the loop's semantics.

Invariant:

Let s_i and s'_i be the initial state of A and A' , respectively.

Let s_f and s'_f be the state reached by A and A' , respectively, after $A.f()$ and $A'.f()$ are executed from s_i and s'_i , respectively.

Then, the coupling invariant is

$$\forall s_i, s'_i . (s_i = s'_i) \rightarrow (s_f = s'_f)$$
