

**Definition 6** (Linking). *Linking of modules  $M$  and  $M'$  is*

$$\begin{aligned} * & : Module \times Module \longrightarrow Module \\ M * M' & = \begin{cases} M *_{aux} M', & \text{if } WFL(M, M') \\ \perp & \text{otherwise.} \end{cases} \end{aligned}$$

$$(M *_{aux} M')(c) = \begin{cases} M(id), & \text{if } M(id) \text{ is defined} \\ M'(id) & \text{otherwise.} \end{cases}$$

$$\begin{aligned} WFL(M, M') & \equiv \\ & dom(M) \cap dom(M') \cap ClassId = \emptyset \wedge \\ & \forall S \in SpecId \cap dom(M) \cap dom(M'). M(S) = M(S') \\ & WFP(M, M') \wedge WFP(M', M) \\ WFP(M, M') & \equiv \\ \forall C. M(C) = \mathbf{private}.... & \rightarrow \mathbf{new } C... \text{ does not appear in } M' \end{aligned}$$

In the above, the predicate  $WFL(M, M')$  asserts that linking of the modules  $M$  and  $M'$  is well-defined. It requires that 1) classes are not defined more than once, 2) specifications may have been defined more than once, but then their bodies must be identical<sup>5</sup>, and 3) no module can call private