

Stipula Prototype Syntax

adele.veschetti2@unibo.it

```
 $\langle prog \rangle ::= \text{'stipula'} \langle id \rangle \text{'{' } \langle declist \rangle^* \langle agreement \rangle? \langle fun \rangle + \text{'}' };$   
 $\langle agreement \rangle ::= (\text{'agreement'} \text{'(' } \langle disputer \rangle \text{'(' } \langle disputer \rangle)^* \text{'')' } \text{'(' } \langle vardec \rangle \text{'(' } \langle vardec \rangle)^* \text{'')' } \text{'{' } (\langle assign \rangle)^+ \text{'}' } \Rightarrow \text{'@'} \langle state \rangle);$   
 $\langle fun \rangle ::= ((\text{'@'} \langle state \rangle)^+ \langle disputer \rangle \text{'(' } \langle disputer \rangle)^* \text{' ':' } \langle id \rangle \text{'(' } (\langle vardec \rangle \text{'(' } \langle vardec \rangle)^* \text{'')? } \text{'')' } \text{'[' } (\langle assetdec \rangle \text{'(' } \langle assetdec \rangle)^* \text{'')? } \text{'']' } \text{'(' } \langle prec \rangle \text{'')? } \text{'{' } \langle stat \rangle + \text{' ;' } \langle events \rangle + \text{'}' } \Rightarrow \text{'@'} \langle state \rangle );$   
 $\langle assign \rangle ::= (\langle disputer \rangle \text{'(' } \langle disputer \rangle)^* \text{' ':' } \langle vardec \rangle \text{'(' } \langle vardec \rangle)^* );$   
 $\langle stat \rangle ::= \text{'_'} \mid (\langle value \rangle \text{'->' } \mid \text{'-o'} \rangle \langle value \rangle \text{'(' } \langle value \rangle)^? ) \mid \langle ifelse \rangle ;$   
 $\langle ifelse \rangle ::= (\text{'if'} \text{'(' } \langle expr \rangle \text{'')' } \text{'{' } \langle stat \rangle + \text{'}' } (\text{'else if'} \text{'(' } \langle expr \rangle \text{'')' } \text{'{' } \langle stat \rangle + \text{'}' } )^* (\text{'else'} \text{'{' } \langle stat \rangle + \text{'}' } )^? );$   
 $\langle events \rangle ::= \text{'_'} \mid ( \langle expr \rangle \text{'>>' } \text{'@'} \text{'id'} \text{'{' } \langle stat \rangle + \text{'}' } \Rightarrow \text{'@'} \text{'id'} );$   
 $\langle prec \rangle ::= \langle expr \rangle ;$   
 $\langle expr \rangle ::= \text{'(' } \langle term \rangle ((\text{'+' } \mid \text{'-'} \mid \text{'||'}) \langle expr \rangle)^? ;$   
 $\langle term \rangle ::= \langle factor \rangle ((\text{'*'} \mid \text{'/' } \mid \text{'\&\&'}) \langle term \rangle)^? ;$   
 $\langle factor \rangle ::= \langle value \rangle ((\text{'==' } \mid \text{'<' } \mid \text{'>' } \mid \text{'<=' } \mid \text{'>=' } \mid \text{'!=' } ) \langle value \rangle)^? ;$   
 $\langle varasm \rangle ::= \langle vardec \rangle \text{'=' } \langle expr \rangle ;$   
 $\langle declist \rangle ::= \langle type \rangle \langle strings \rangle ;$   
 $\langle type \rangle ::= \text{'asset'} \mid \text{'field'} \mid \text{'int'} \mid \text{'real'} \mid \text{'boolean'} \mid \text{'party'} \mid \text{'init'} ;$   
 $\langle state \rangle ::= \langle strings \rangle ;$   
 $\langle disputer \rangle ::= \langle strings \rangle ;$   
 $\langle vardec \rangle ::= \langle strings \rangle ;$ 
```

$\langle assetdec \rangle ::= \langle strings \rangle ;$
 $\langle value \rangle ::= \langle number \rangle \mid \texttt{'now'} \mid \texttt{'('} \langle expr \rangle \texttt{'})'} \mid \langle strings \rangle \mid \texttt{'_'} \mid (\texttt{'true'} \mid \texttt{'false'}) ;$
 $\langle id \rangle ::= \texttt{'id'} ;$
 $\langle strings \rangle ::= \texttt{SINGLE_STRING} \mid \texttt{DOUBLE_STRING} \mid \texttt{'id'} ;$
 $\langle real \rangle ::= \langle number \rangle \texttt{'.'} \langle number \rangle ;$
 $\langle number \rangle ::= \texttt{INT} \mid \texttt{REAL} ;$