

Circus Cookie Machine - parsing

Leonardo Freitas

February 2007

Examples from Manuela Xavier MSc thesis.

section *circus_cookies* **parents** *circus_toolkit*

COOKIE ::= *ok* | *notok*

channel *in*, *change* : \mathbb{N}
channel *out* : *COOKIE*

| *cookieValue*, *cookieQuantity* : \mathbb{N}

process *CookieMachine* $\hat{=}$ **begin**

state *State* == [*money*, *quantity* : \mathbb{N}]

InitState == [*State'* | *money'* = 0 \wedge *quantity'* = *cookieQuantity*]

InputMoney == [Δ *State*; *x?* : \mathbb{N} | *money* \leq *cookieValue* \wedge *money'* = *money* + *x?*]

Input $\hat{=}$ (*money* \leq *cookieValue*) & *in* ?*x* \longrightarrow *InputMoney*

OutputCookieOk == [Δ *State*; *o!* : *COOKIE* | *money* \geq *cookieValue* \wedge *quantity* > 0 \wedge *money'* = *money* - *quantity*]

OutputCookieNotOk == [Δ *State*; *o!* : *COOKIE* | *money* \geq *cookieValue* \wedge *quantity* = 0 \wedge *money'* = *money*]

OutputCookie == *OutputCookieOk* \vee *OutputCookieNotOk*

Output $\hat{=}$ (*money* \geq *cookieValue*) &

(**var** *o* : *COOKIE* • *OutputCookie* ; (*out* !*o* \longrightarrow *change* !*money* \longrightarrow **Skip**))

• *StateInit* ; (μ *X* • (*Input* \square *Output*) ; *X*)

end