

assume( $\rho(x1,x2)$ ,  
 $\rho(x1,x2) = x1 \in \mathbb{N}$ )

entry\_point\_54

fi\_54\_n\_5

5: x1 = 3

fi\_54\_n\_4

non( x1 ==s 6 )

x1 ==s 6

3: x1 = 6

fi\_54\_n\_2

2: x2 = 0

fi\_54\_n\_1

Assert ( $\gamma$ ),  
 $\gamma(x1, x2) = (x1 = 6)$

Rappel des règles:

$$(0): \{\rho\} \text{programme} \{\gamma\} \\ \forall x, \rho \Rightarrow WP(\text{programme}, \gamma)$$

$$(1): WP(S1; S2, \gamma) = WP(S1, WP(S2, \gamma))$$

$$(2): WP(x := e, \gamma) = \gamma[x \leftarrow e]$$

$$(3): WP(\text{if } C \text{ then } S1 \text{ else } S2, \gamma) = \\ (C \Rightarrow WP(S1, \gamma)) \wedge (\neg C \Rightarrow WP(S2, \gamma))$$

$$\{\rho\} \text{programme} \{\gamma\} \xrightarrow{(0)} \forall x1, x2, \rho(x1, x2) \Rightarrow WP(\text{programme}, \gamma)$$

Equation finale à transmettre au SMT avec la définition de  $\gamma$  et  $\rho$   
 $\rho(x1, x2) \Rightarrow ( ((3 = 6) \Rightarrow \gamma(3, 0)) \wedge ((3 \neq 6) \Rightarrow \gamma(6, 0)) )$

(2)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3, x1 = 6 \Rightarrow \gamma(x1, 0) \wedge x1 \neq 6 \Rightarrow \gamma(x1, 6))$$

(2)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3, x = 6 \Rightarrow \gamma(x1, 0) \wedge x1 \neq 6 \Rightarrow WP(x1 := 6, \gamma(x1, 0)))$$

(3)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3, WP(\text{if } (x1 = 6) \text{ then else } x1 := 6, \gamma(x1, 0)))$$

(1)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3; \text{if } (x1 = 6) \text{ then else } x1 := 6, \gamma(x1, 0))$$

(2)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3; \text{if } (x1 = 6) \text{ then else } x1 := 6, WP(x2 := 0, \gamma(x1, x2)))$$

(1)

$$\rho(x1, x2) \Rightarrow WP(x1 := 3; \text{if } (x1 = 6) \text{ then else } x1 := 6; x2 := 0, \psi(x1, x2))$$