

# Sample Military Security Policy

FX-1 Document	Amy (TS)	Biao (S)	Sonja (C)	Jude (UC)
threat scenario (TS)	read			
status report (TS)	read, write	write	write	write
requirements (S)	read	read		
design (S)	read	read, write		
artist renderings (C)	read	read	read, write	
press releases (UC)	read	read	read	read, write

Access control matrix

Simple security property and \*-property

Proof of theorem

$$\begin{array}{l} (sl(O) \leq_s sl(P)) \supset (P \text{ controls } \langle read, O \rangle) \\ sl(O) \leq_s sl(P) \\ P \text{ says } \langle read, O \rangle \end{array}$$

$\langle read, O \rangle$

$$\begin{array}{l} (sl(P) \leq_s sl(O)) \supset (P \text{ controls } \langle write, O \rangle) \\ sl(P) \leq_s sl(O) \\ P \text{ says } \langle write, O \rangle \end{array}$$

$\langle write, O \rangle$

FIGURE 5.4 Status report proof

1.  $sl(Jude) \leq_s sl(status_{FX1}) \supset (Jude \text{ controls } \langle write, status_{FX1} \rangle)$  Assumption
2.  $sl(Jude) =_s UC$  Assumption
3.  $sl(status_{FX1}) =_s TS$  assumption
4.  $UC \leq_s TS$  Assumption
5.  $Jude \text{ says } \langle write, status_{FX1} \rangle$  Assumption
6.  $sl(Jude) \leq_s sl(status_{FX1})$  2, 3, 4  $sl \leq_s$
7.  $Jude \text{ controls } \langle write, status_{FX1} \rangle$  1, 6 Modus Ponens
8.  $\langle write, status_{FX1} \rangle$  7, 5 Controls

Behavioral theorem

$$\begin{array}{l} sl(Jude) \leq_s sl(status_{FX1}) \supset (Jude \text{ controls } \langle write, status_{FX1} \rangle) \\ sl(Jude) =_s UC \\ sl(status_{FX1}) =_s TS \\ UC \leq_s TS \\ Jude \text{ says } \langle write, status_{FX1} \rangle \\ \hline \langle write, status_{FX1} \rangle \end{array}$$