

521 (time merge) We want to repeatedly read an input on either channel  $c$  or channel  $d$ , whichever comes first, and write it on channel  $e$ . At each reading, if input is available on both channels, read either one; if it is available on just one channel, read that one; if it is available on neither channel, wait for the first one and read that one (in case of a tie, read either one).

(a) ✓ Write the specification formally, and then write a program.  
 § see book Subsection 9.1.4

(b) Prove

$$\mathcal{I}e_{we} = t \uparrow ((\mathcal{I}c_{rc}) \downarrow (\mathcal{I}d_{rd}) + 1)$$

$$\forall m, n. \mathcal{I}e_{we+m+n+1} \leq (\mathcal{I}c_{rc+m}) \uparrow (\mathcal{I}d_{rd+n}) \uparrow (\mathcal{I}e_{we+m+n}) + 1$$

no solution given