Errata (October, 2009)

found in "Real-Time Systems" (E.-R. Olderog and H. Dierks)

Page	Error
48–49	**Wrong:** Crtl (seven times) **Correct:** Ctrl
66	**Wrong:**

$$FA^2(P) \iff \lceil\rceil \vee \lceil P\rceil \vee \lceil\neg P\rceil$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \;,$$

$$FA^3(P) \iff \lceil\rceil \vee \lceil P\rceil \vee \lceil\neg P\rceil$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \vee$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \;;\; \lceil P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \;;\; \lceil\neg P\rceil \;.$$

Correct:

$$FA^2(P) \iff \lceil\rceil \vee \lceil P\rceil \vee \lceil\neg P\rceil \vee$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \;,$$

$$FA^3(P) \iff \lceil\rceil \vee \lceil P\rceil \vee \lceil\neg P\rceil \vee$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \vee$$
$$\lceil P\rceil \;;\; \lceil\neg P\rceil \;;\; \lceil P\rceil \vee \lceil\neg P\rceil \;;\; \lceil P\rceil \;;\; \lceil\neg P\rceil \;.$$

---

75 **Wrong:**

(a) Draw the interpretation of the following state assertion:

$$\mathcal{I}[\![\mathsf{Light} = \mathsf{green} \wedge \neg(\mathsf{Button} = \mathsf{release})]\!]$$

on the interval $[0, 7]$.

Correct:

(a) Draw the interpretation of the following state assertion:

$$\mathsf{Light} = \mathsf{green} \wedge \neg(\mathsf{Button} = \mathsf{release})$$

on the interval $[0, 7]$.

78 **Wrong:**

(a) $\models \lceil\rceil \Longrightarrow \int P = 0,$

(b) $\models \lceil \neg P \rceil \Longrightarrow \int P = 0,$

(c) $\models \lceil\rceil \Longrightarrow \int P = 0.$

Correct:

(a) $\models \lceil\rceil \Longrightarrow \int P = 0,$

(b) $\models \lceil \neg P \rceil \Longrightarrow \int P = 0,$

---

93 **Wrong:**

$$\forall d \bullet \Box(\lceil q \rceil^1 \,;\, \lceil B \rceil^d \,;(\ell = 0 \vee \lceil C_1 \rceil \,;\, \lceil \neg X \rceil)\, \lceil X \rceil^1 \,;\, \lceil B \vee C_2 \rceil^1 \,;\ell = 4 \Longrightarrow \ell = 4 \,;\, \lceil q' \rceil^1 \,;(\lceil B \rceil \,;\, \lceil C_1 \rceil \,;\, \lceil B \rceil \wedge \ell = d) \,;\mathsf{true}).$$

Correct:

$$\forall d \bullet \Box(\lceil q \rceil^1 \,;\, \lceil B \rceil^d \,;(\ell = 0 \vee \lceil C_1 \rceil \,;\, \lceil \neg X \rceil) \,;\, \lceil X \rceil^1 \,;\, \lceil B \vee C_2 \rceil^1 \,;\ell = 4 \Longrightarrow \ell = 4 \,;\, \lceil q' \rceil^1 \,;(\lceil B \rceil \,;\, \lceil C_1 \rceil \,;\, \lceil B \rceil \wedge \ell = d) \,;\mathsf{true}).$$

---

93 **Wrong:** In the illustration of (ii): $\lceil C_1 \rceil \;\; \lceil \neg X \rceil$
Correct: $\lceil C_1 \rceil \,;\, \lceil \neg X \rceil$

---

93 **Wrong:** In the illustration of (ii):$\lceil B \rceil \,;\, \lceil C \rceil \,;\, \lceil B \rceil$
Correct: $\lceil B \rceil \,;\, \lceil C_1 \rceil \,;\, \lceil B \rceil$

---

94 **Wrong:**

$$copy(\lceil q_{\text{fin}} \rceil^1 \,;\, \lceil B \vee C_1 \rceil^1 \,;\, \lceil X \rceil^1 \,;\, \lceil B \vee C_2 \rceil^1, \{q_{\text{fin}}, B, X, C_1, C_2\}.$$

Correct:

$$copy(\lceil q_{\text{fin}} \rceil^1 \,;\, \lceil B \vee C_1 \rceil^1 \,;\, \lceil X \rceil^1 \,;\, \lceil B \vee C_2 \rceil^1, \{q_{\text{fin}}, B, X, C_1, C_2\}).$$

---

98 **Wrong:**

$$\forall x \bullet \Box \;\; ((F \wedge \ell = x) \,;\ell > 0) \Longrightarrow (F \wedge \ell = x) \,;\, \lceil P \rceil \,;\mathsf{true}).$$

Correct:

$$\forall x \bullet \Box \;\; ((F \wedge \ell = x) \,;\ell > 0) \Longrightarrow (F \wedge \ell = x) \,;\, \lceil P \rceil \,;\mathsf{true}.$$

---

105 **Wrong:** Consider an interpretation $\mathcal{I}$, a valuation $\mathcal{V}$, and an interval $[b, e]$ with $\mathcal{I}, \mathcal{V}, [c, d] \models$ GB-Ctrl.
Correct: Consider an interpretation $\mathcal{I}$, a valuation $\mathcal{V}$, and an interval $[c, d]$ with $\mathcal{I}, \mathcal{V}, [c, d] \models$ GB-Ctrl.

---

137 **Wrong:**

- $E \subseteq L \times B_{?!} \times \Phi(\mathbb{X}) \times \mathcal{P}(\mathbb{X}) \times L$ is the set of directed *edges*.

Correct:

- $E \subseteq L \times B_{?!} \times \Phi(\mathbb{X}) \times \mathcal{P}(\mathbb{X}) \times L$ is the finite set of directed *edges*.

172 **Wrong:**
Extended timed automata specialise to pure timed automata if $C = U = V = \varnothing$ and if all clock resets are of the form $x := 0$. Then a list of such resets can be replaced by a set of resets as used in Definition 4.3.
Correct:
Extended timed automata specialise to pure timed automata if $C = U = V = \varnothing$. In this case the list of reset operations can be replaced by a set of clock resets as used in Definition 4.3.

173 **Wrong:**
For extended timed automata $\mathcal{A}_e = (L_i, C_i, B_i, U_i, \mathbb{X}_i, V_i, I_i, E_i, \ell_{\text{ini},i})$ with ...
Correct:
For extended timed automata $\mathcal{A}_i = (L_i, C_i, B_i, U_i, \mathbb{X}_i, V_i, I_i, E_i, \ell_{\text{ini},i})$ with ...

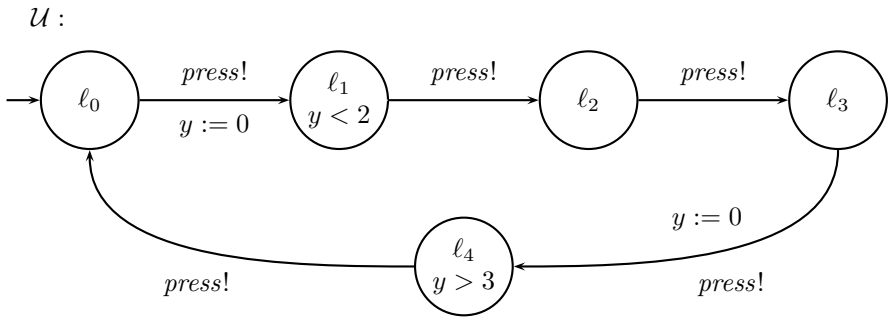
174 **Wrong:**

- (♣) there are *no* $i, j \in \{1, \ldots, n\}$ and $b \in U$ with $(\ell_i, b!, \varphi_i, \vec{r}_i, \ell'_i) \in E_i$ and $(\ell_j, b?, \varphi_j, \vec{r}_j, \ell'_j) \in E_j$, i.e. there is no urgent action enabled,

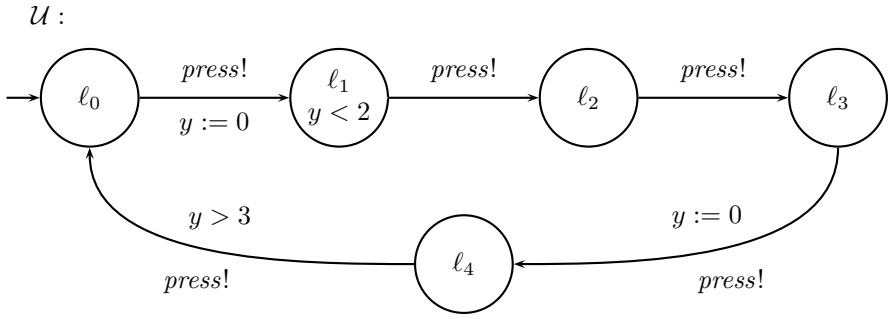
Correct:

- (♣) there are *no* $i \neq j \in \{1, \ldots, n\}$ and $b \in U$ with $(\ell_i, b!, \varphi_i, \vec{r}_i, \ell'_i) \in E_i$ and $(\ell_j, b?, \varphi_j, \vec{r}_j, \ell'_j) \in E_j$, i.e. there is no urgent action enabled,

181 **Wrong:**



Correct:



181 **Wrong:**

$$\xrightarrow{\tau} \langle (\mathit{off}, q0), x = y = 11.9 \rangle \ldots$$

Correct:

$$\xrightarrow{\tau} \langle (\mathit{off}, \ell_0), x = y = 11.9 \rangle \ldots$$

210 **Wrong:**

$$c \;=\; \varepsilon + \max(\{0\} \cup \{s(\pi, \{\texttt{Error}\}) \mid \pi \in \{\texttt{N}, \texttt{T}\} \setminus \{\texttt{N}, \texttt{T}\}\})$$

Correct:

$$c \;=\; \varepsilon + \max(\{0\} \cup \{s(\pi, \{\texttt{no\_tr}, \texttt{tr}\}) \mid \pi \in \{\texttt{N}, \texttt{T}\} \setminus \{\texttt{N}, \texttt{T}\}\})$$

214 **Wrong:**

$$\text{Unb.Stab-3}: \quad \lceil \neg \mathtt{W} \rceil \ ; \lceil \mathtt{W} \wedge \{\mathtt{ms}\} \rceil$$

Correct:

$$\text{Unb.Stab-3}: \quad \lceil \neg \mathtt{W} \rceil \ ; \lceil \mathtt{W} \wedge \{\mathtt{m}, \mathtt{s}\} \rceil$$

---

295 **Wrong:**
Let $\mathcal{P}(X)$ denote the *power set* of a set X, i.e. the set of all subsets of X:

$$\mathcal{P}(X) = \{X \mid Z \subseteq X\}.$$

Correct:
Let $\mathcal{P}(X)$ denote the *power set* of a set X, i.e. the set of all subsets of X:

$$\mathcal{P}(X) = \{Z \mid Z \subseteq X\}.$$

Thanks to the following readers for spotting the errors:

Stefan Hallerstede,
Mani Swaminathan,
Bernd Westphal