Assignment 7: CCS

ETH Zurich

1 Derivations

By using SOS rules for CCS prove the existence of the following transitions where you assume that A $\stackrel{\mathsf{def}}{=} b.a$.B:

1. $(A \,|\, \overline{b}.0) \smallsetminus \{b\} \ \stackrel{\tau}{\longrightarrow}\ (a.B \,|\, 0) \smallsetminus \{b\}$

2. $(A \,|\, \overline{b}.a.B) + (\overline{b}.A) \ \stackrel{\overline{b}}{\longrightarrow}\ (A \,|\, a.B)$

2 Labelled Transition Systems

Consider the following defining CCS equations:

$$
\begin{aligned}
\text{CM} \ &\stackrel{\mathsf{def}}{=}\ coin.\overline{coffee}.\text{CM} \\
\text{CS} \ &\stackrel{\mathsf{def}}{=}\ \overline{pub}.\overline{coin}.coffee.\text{CS} \\
\text{UNI} \ &\stackrel{\mathsf{def}}{=}\ (\text{CM} \,|\, \text{CS}) \smallsetminus \{coin, coffee\}
\end{aligned}
$$

Use the rules of the SOS semantics for CCS to derive the labelled transitions system for the process UNI defined above. The proofs can be ommitted and a drawing of the LTS is enough.