We present a denotational model for mobile, timed, unbounded nondeterministic dataflow networks whose components communicate in a point-to-point fashion. We first introduce a model for static, point-to-point dataflow networks. In this model components and networks of components are represented by sets of strongly pulse-driven stream processing functions. A stream processing function is strongly pulse-driven if its output until time $j+1$ is completely determined by its input until time $j$. This model is then extended to support mobility by allowing the components to communicate ports. In the mobile case, the functions are not only required to be strongly pulse-driven, but also to be generic in the sense that they do not read or write on channels whose ports they have not received or generated themselves. The model is shown to be fully abstract. We demonstrate the power and applicability of our model by specifying a mobile communication central.

Stichworte: Mobility; Metric Spaces; Point-to-Point Communication

Jahr: 1995

Jahr / Monat: 1995-10-01 00:00:00

Seiten: 39

Occurences: · Einrichtungen > Fakultäten > Fakultät für Informatik > Technische Berichte > 1995