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A structural transformation from $p$-$\pi$ to MSVL.

Summary: This paper presents a structural transformation approach from $p$-$\pi$ processes to MSVL programs. To this end, channel and communication primitives are firstly defined in MSVL. Further, based on these definitions, a mapping function $F$ which transforms bounded $p$-$\pi$ processes into MSVL programs is formalized. Moreover, the soundness of the transformation is proved. By the transformation, $p$-$\pi$ can provide a mechanism to model, simulate and verify concurrent time-dependent systems by means of the techniques of MSVL. Finally, a case study is given to illustrate how the transformation can be used in practice.

Keywords: process algebra; temporal logic; $\pi$-calculus; MSVL; verification
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