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Resource access control in systems of mobile agents. (English) [Zbl 0917.68047](#)

Nestmann, Uwe (ed.) et al., HLCL '98. 3rd international workshop on High-level concurrent languages. Nice, France, September 12, 1998. Amsterdam: Elsevier, Electronic Notes in Theoretical Computer Science. 16.3, electronic paper No. 3 (1998).

Summary: We describe a typing system for a distributed pi-calculus which guarantees that distributed agents cannot access the resources of a system without first being granted the capability to do so. The language studied allows agents to move between distributed locations and to augment their set of capabilities via communication with other agents. The type system is based on the novel notion of a location type, which describes the set of resources available to an agent at a location. Resources are themselves equipped with capabilities, and thus an agent may be given permission to send data along a channel at a particular location without being granted permission to read data along the same channel. We also describe a tagged version of the language, where the capabilities of agents are made explicit in the syntax. Using this tagged language we define access violations as runtime errors and prove that well-typed programs are incapable of such errors.

For the entire collection see [\[Zbl 0903.00063\]](#).

MSC:

[68N99](#) Theory of software

Cited in **26** Documents

Keywords:

typing system; distributed pi-calculus; location type

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