

Introduction to Distributed and Embedded Multi-agent Systems

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MOBILITY IN EMBEDDED MAS

Protocolo de Transferência de Agentes

Os agentes móveis são agentes especiais **capazes de transcender** seu SMA podendo mover-se, por exemplo, para outro SMA. Os agentes móveis também são **capazes de interagir** com agentes de outros SMA e também transferir-se para um ambiente chamado de ambiente aberto, onde agentes de diferentes SMA podem interagir e trocar informações.

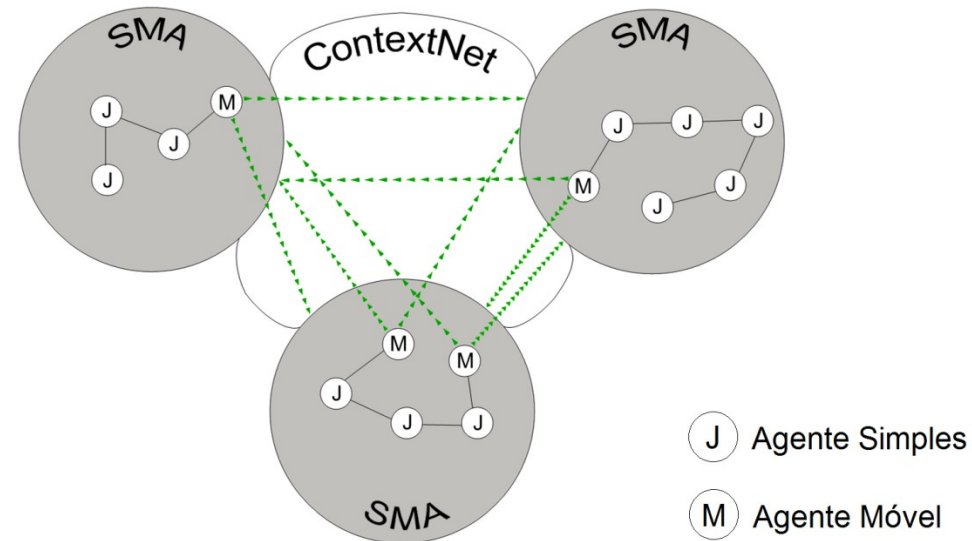


Figura 1. Transferência de agentes móveis

Protocolo de Transferência de Agentes

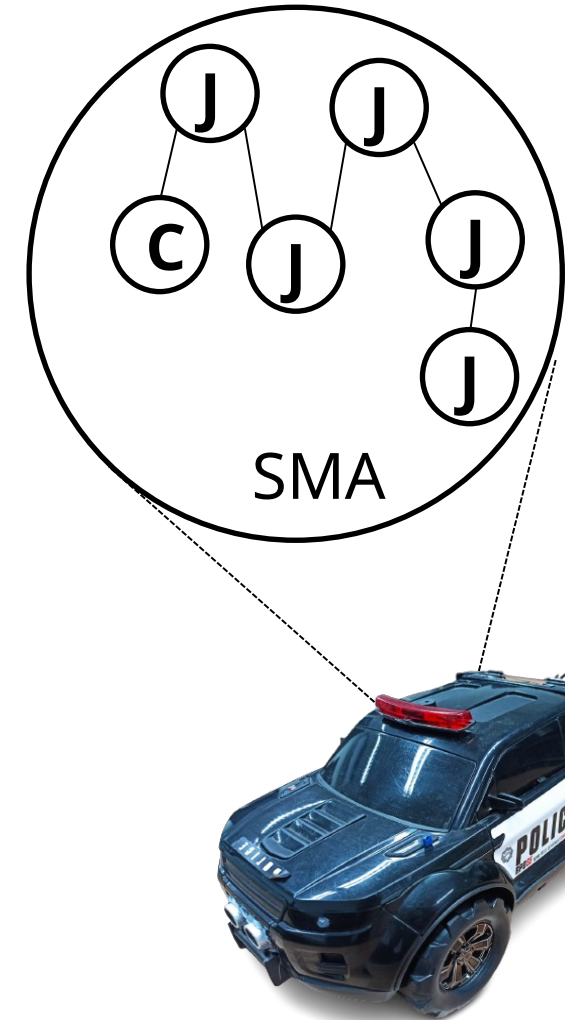
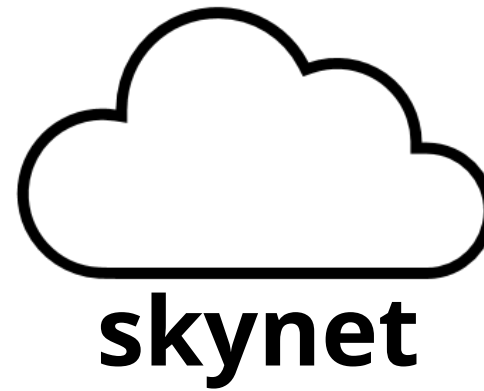
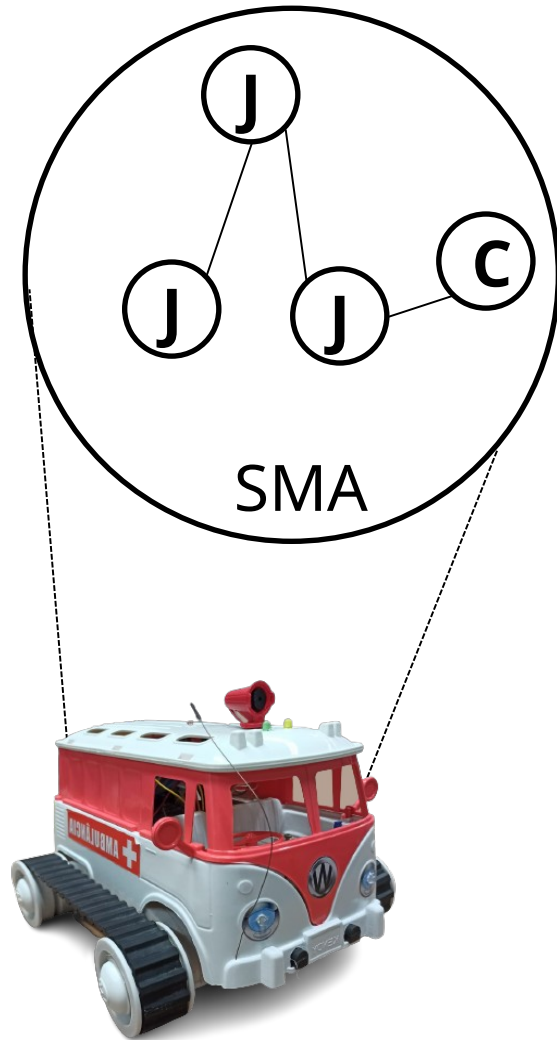
Um **agente cognitivo** está situado em um **SMA** qualquer e ambientado em um **dispositivo**, este agente fica “preso” ao SMA e ao dispositivo, e caso o dispositivo seja danificado o agente cognitivo **não consegue se transferir** para outro SMA.

Protocolo de Transferência de Agentes

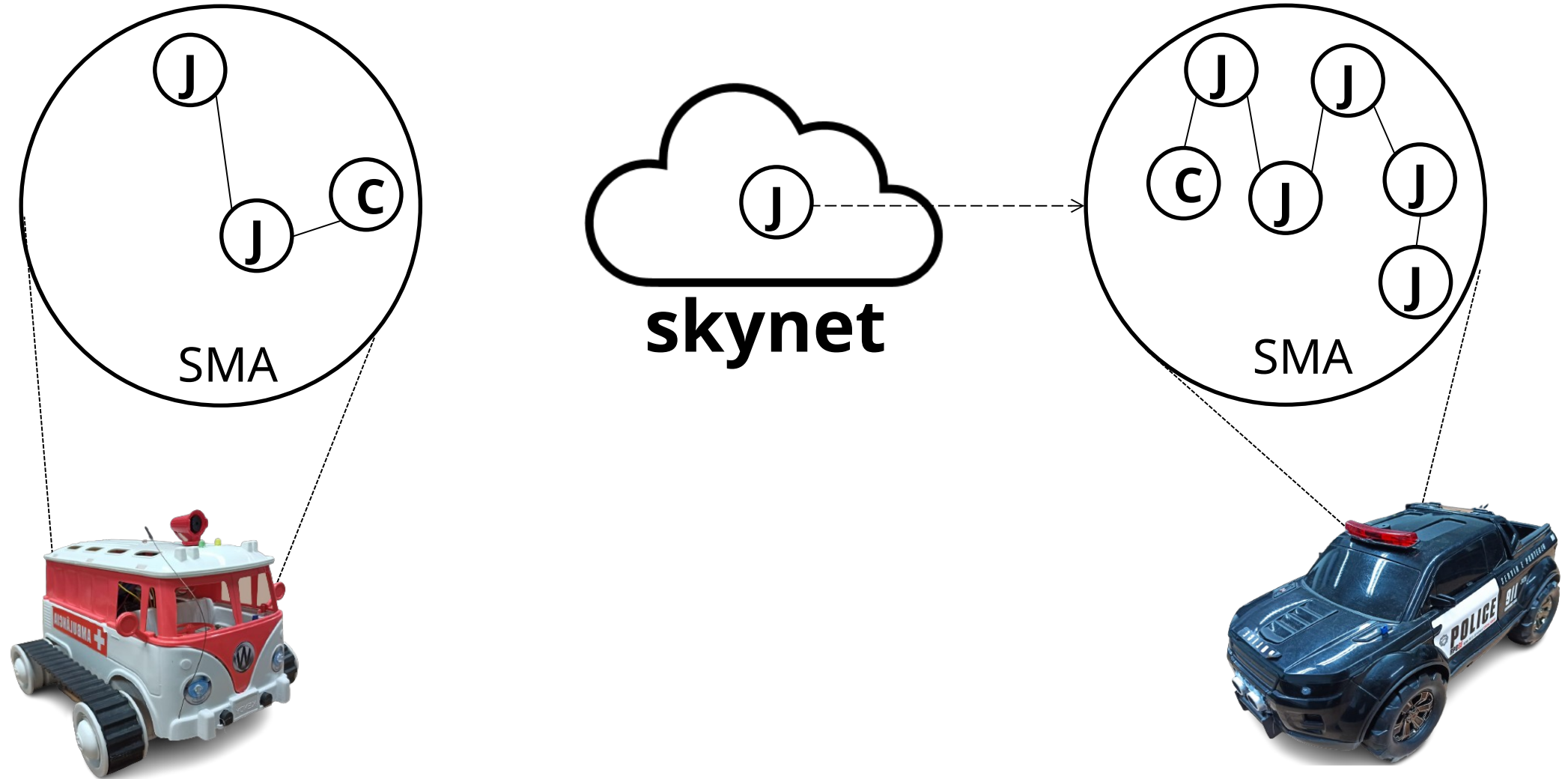
O protocolo de transferência de agentes prevê três possíveis relações entre o agente móvel com o novo SMA.

- Mutualismo
- Inquilinismo
- Predatismo

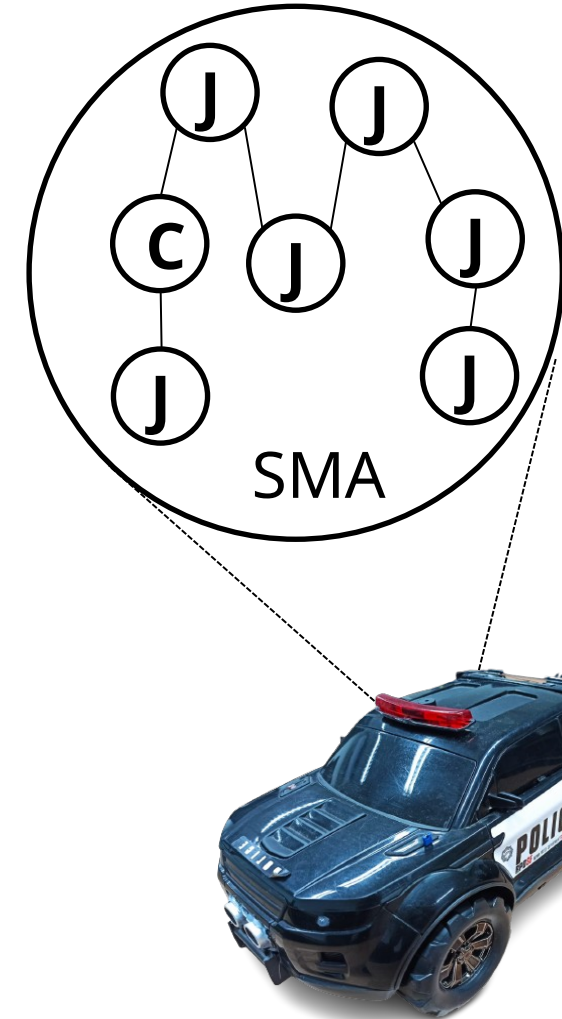
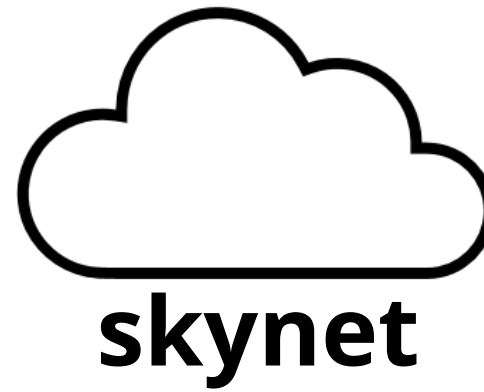
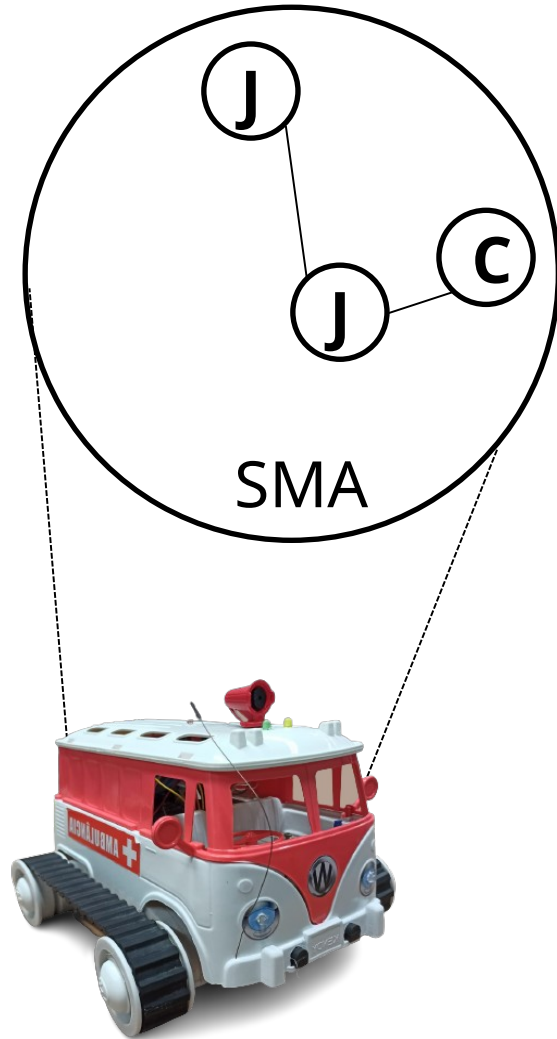
Bio-Inspired: Mutualismo



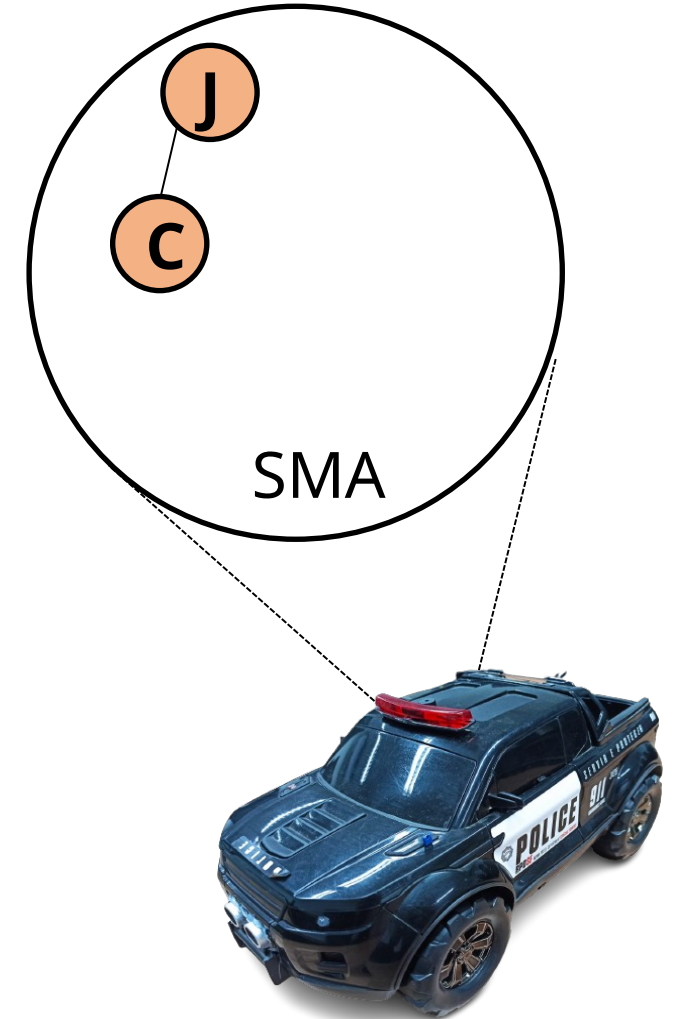
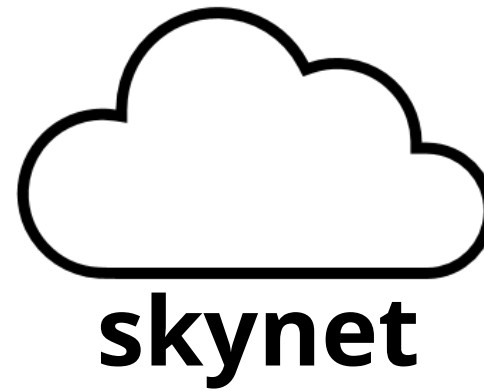
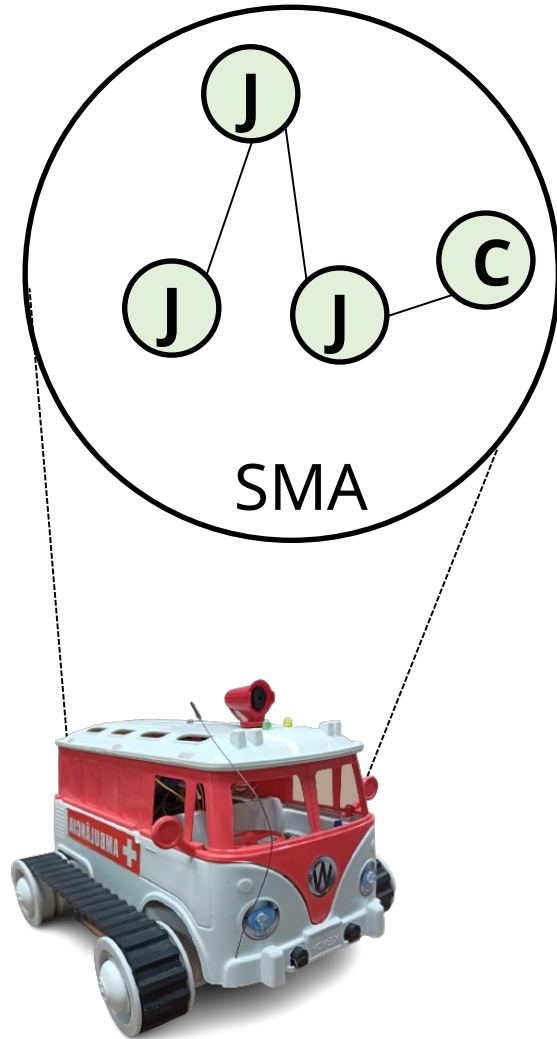
Bio-Inspired: Mutualismo



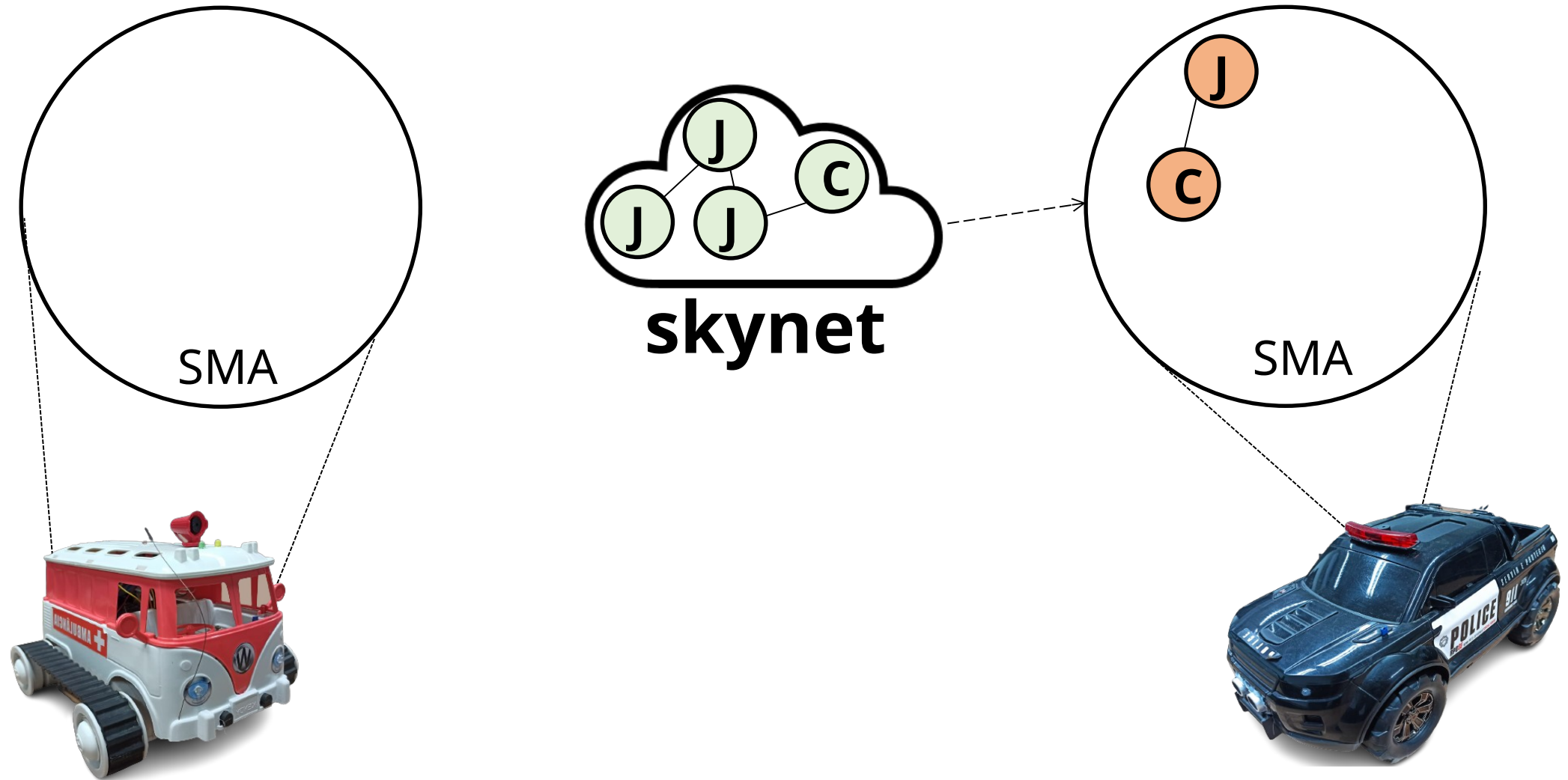
Bio-Inspired: Mutualismo



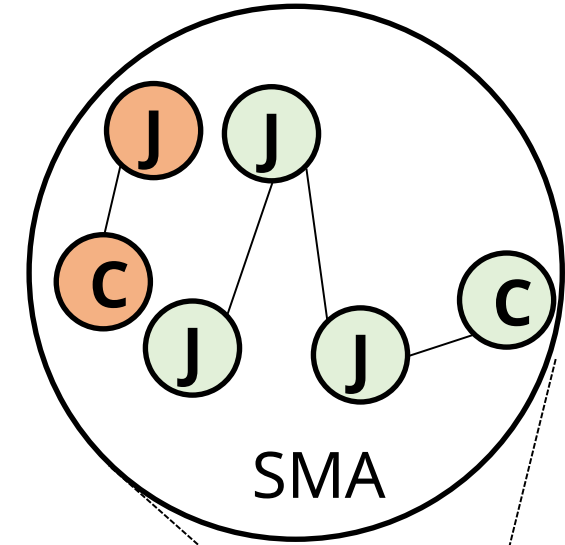
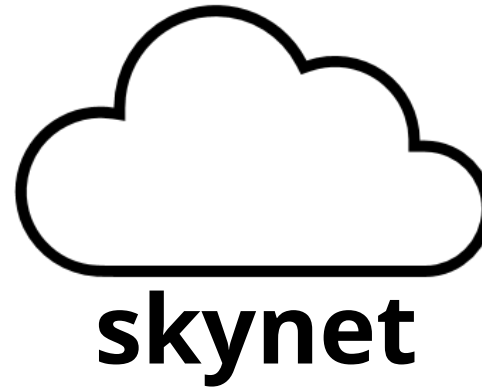
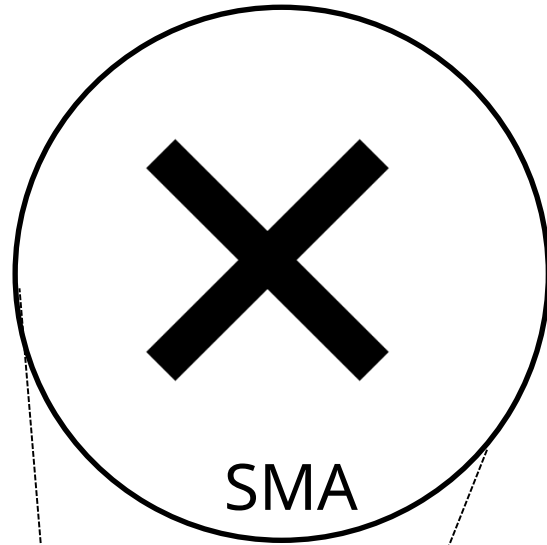
Bio-Inspired: Inquilinismo



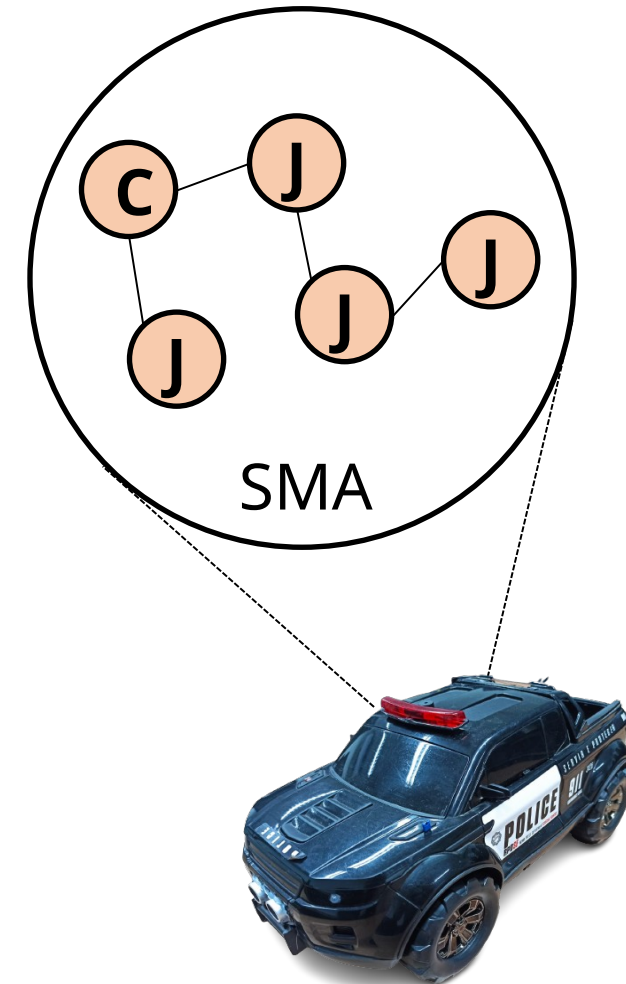
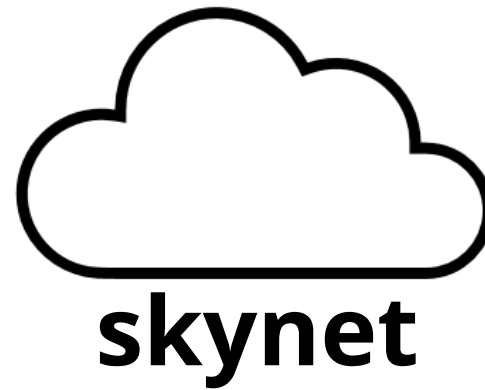
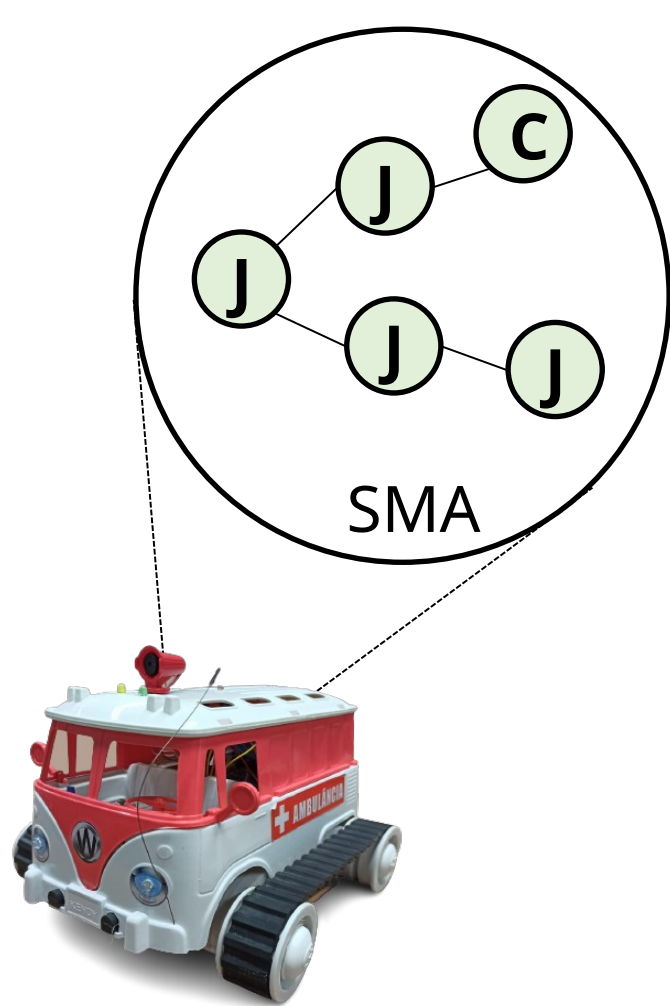
Bio-Inspired: Inquilinismo



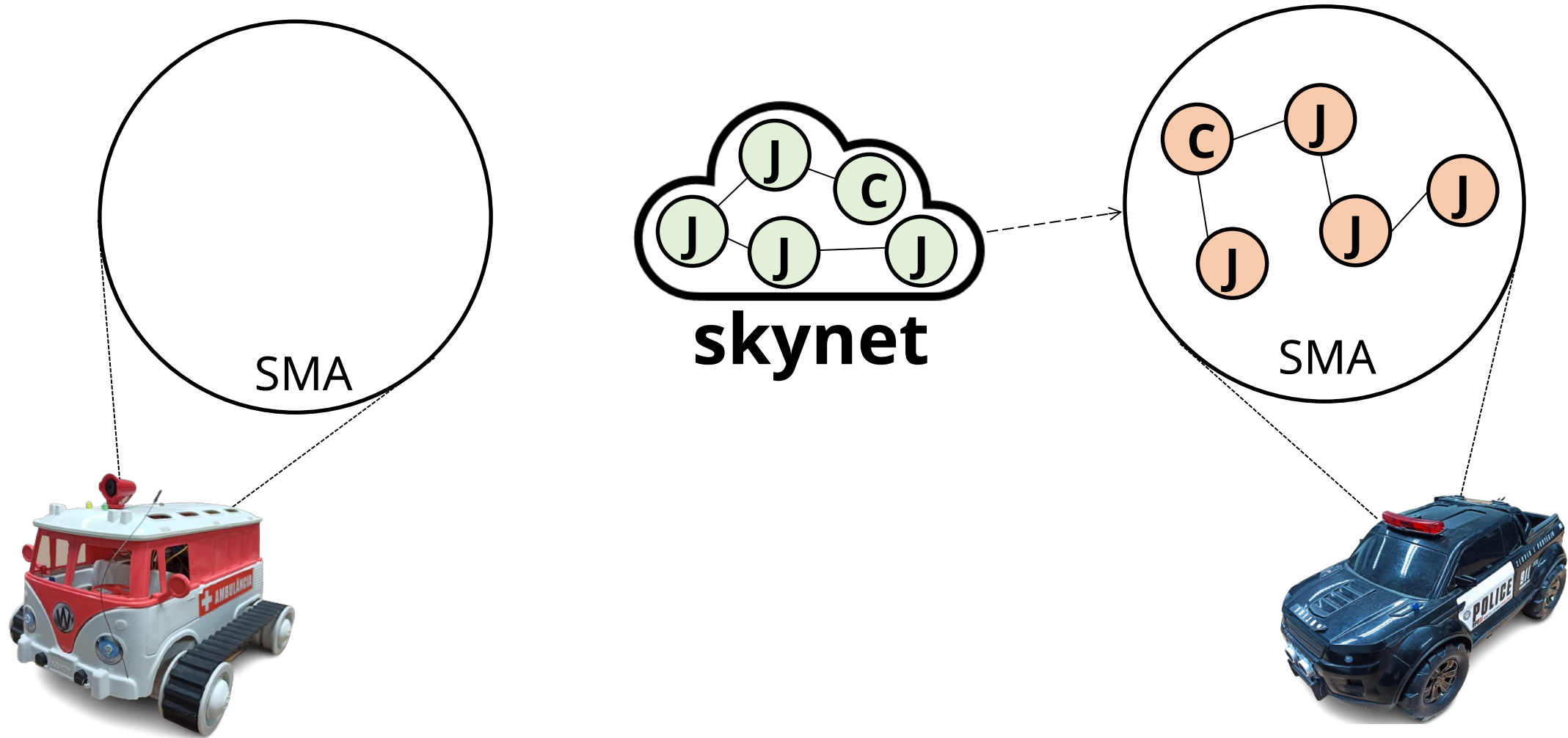
Bio-Inspired: Inquilinismo



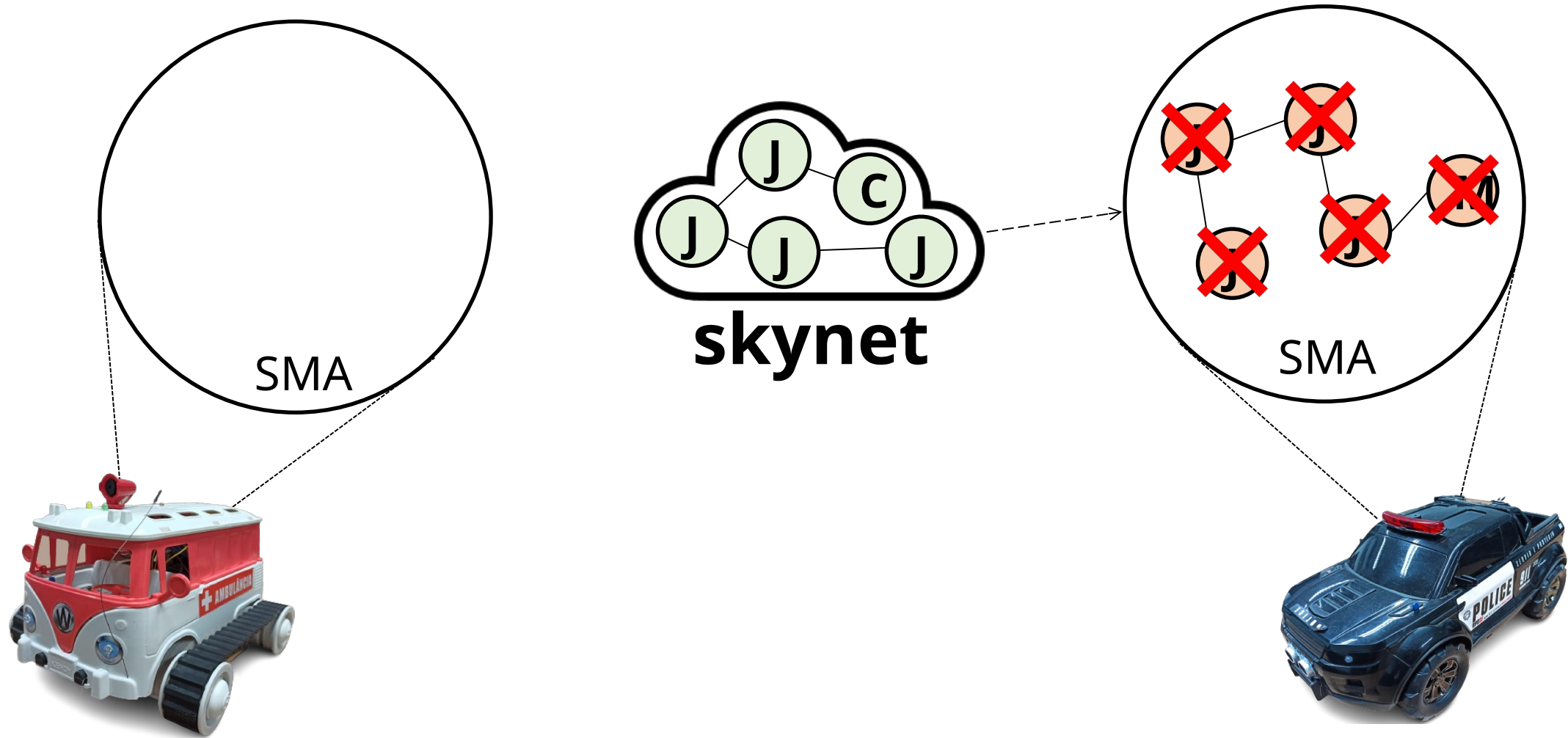
Bio-Inspired: Predatismo



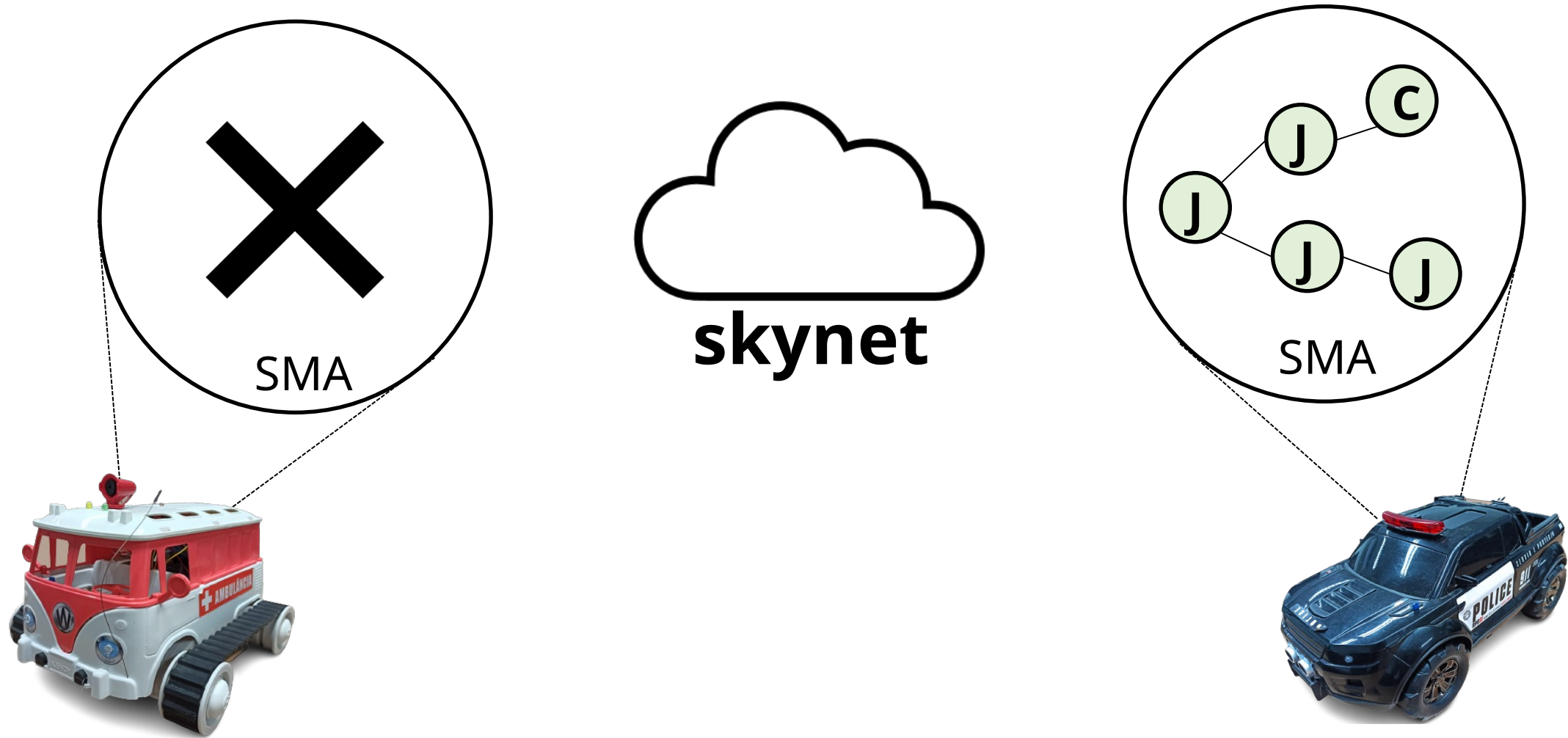
Bio-Inspired: Predatismo



Bio-Inspired: Predatismo



Bio-Inspired: Predatismo



Communicator: Ações Internas

- **Communicator** Internal Actions:

.**moveOut**(agentUuid, predation|inquilinism)

move os agentes para um SMA.

.**moveOut**(agentUuid, mutualism, agent)

envia um agente específico para outro SMA.

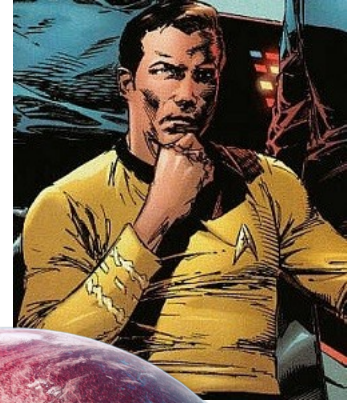
Exemplo: Bio-Inspired Protocol

agent **scott**

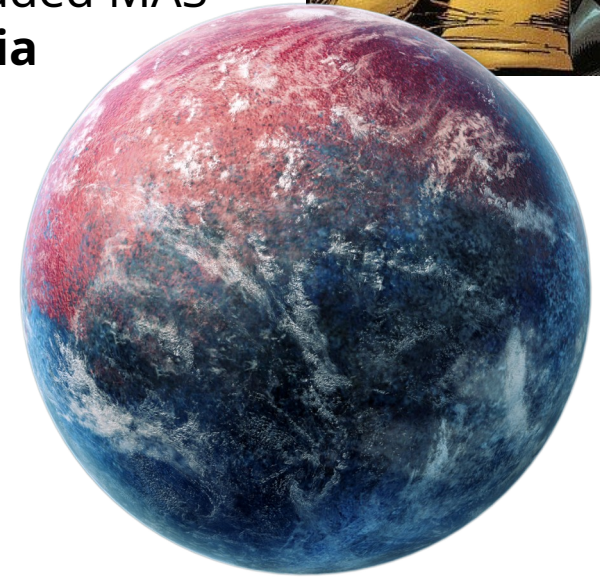


Embedded MAS
enterprise

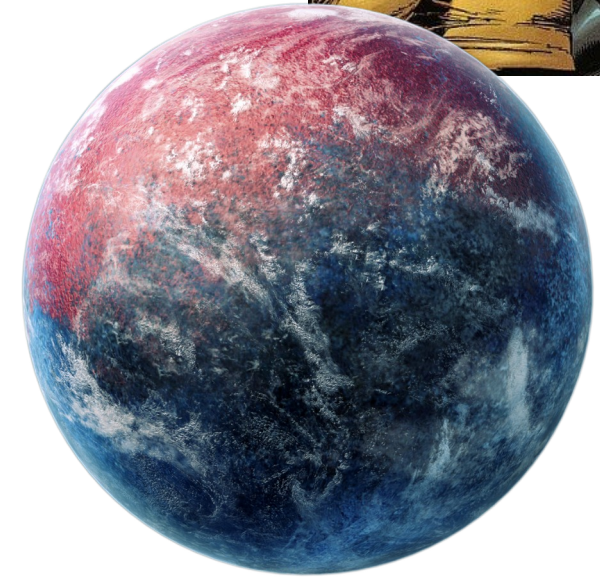
agent **kirk**



Embedded MAS
andoria



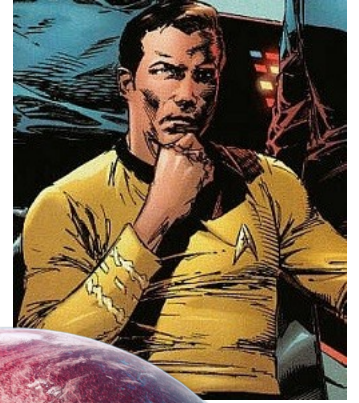
Exemplo: Bio-Inspired Protocol



Exemplo: Bio-Inspired Protocol



Kirk to Scotty...
Beam us up!



Exemplo: Bio-Inspired Protocol



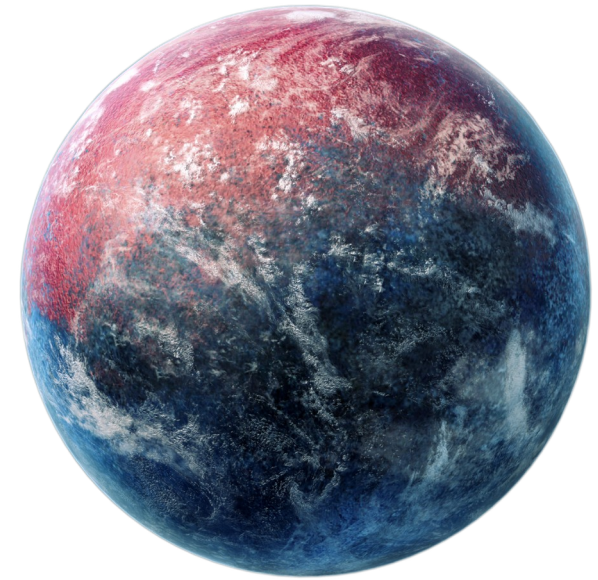
Exemplo: Bio-Inspired Protocol



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Exemplo: Bio-Inspired Protocol



<https://github.com/chon-group/distributedAndEmbeddedAI/tree/main/course/14-MobilityBetweenMultiAgentSystems/example>

OBRIGADO!

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