

FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

FIPA Query Ref Communicative Act Specification

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1 Scope

This document specifies the Query Ref communicative act which is compliant to [FIPA00037] requirements.

2 Query Ref

Summary	The action of asking another agent for the object referred to by an referential expression.
Content	A descriptor (a referential expression).
Description	<p><i>Query-ref</i> is the act of asking another agent to inform the requestor of the object identified by a descriptor. The sending agent is requesting the receiver to perform an <i>inform</i> act (see [FIPA00046]), containing the object that corresponds to the descriptor.</p> <p>The agent performing the <i>query-ref</i> act:</p> <ul style="list-style-type: none"> • does not know which object or set of objects corresponds to the descriptor, and, • believes that the other agent does know which object or set of objects corresponds to the descriptor.
Formal Model	$\langle i, \text{query-ref}(j, \text{Ref } x \delta(x)) \equiv$ $\langle i, \text{request}(j, \langle j, \text{inform-ref}(i, \text{Ref } x \delta(x)) \rangle) \rangle$ $\text{FP: } \neg \text{Bref}_i(\text{Ref } x \delta(x)) \wedge \neg \text{Uref}_i(\text{Ref } x \delta(x)) \wedge$ $\neg \text{B}_i \text{ I}_j \text{ Done}(\langle j, \text{inform-ref}(i, \text{Ref } x \delta(x)) \rangle)$ $\text{RE: Done}(\langle i, \text{Inform}(j, \text{Ref } x \delta(x) = r_1) \rangle \dots $ $\langle i, \text{Inform}(j, \text{Ref } x \delta(x) = r_k) \rangle)$ <p>Note: <i>Ref x δ(x)</i> is one of the referential expressions: <i>!x δ(x)</i>, <i>any x δ(x)</i> or <i>all x δ(x)</i>.</p>
Example	<p>Agent i asks agent j for its available services:</p> <pre>(query-ref :sender i :receiver j :content (all ?x (available-services j ?x)) ...)</pre> <p>j replies that it can reserve trains, planes and automobiles:</p> <pre>(inform :sender j :receiver i :content (= (all ?x (available-services j ?x)) (set (reserve-ticket train) (reserve-ticket plane) (reserve automobile))) ...)</pre>

3 References

- [FIPA00037] FIPA Communicative Act Library Specification. Foundation for Intelligent Physical Agents, 2000.
<http://www.fipa.org/specs/fipa00037/>
- [FIPA00046] FIPA Inform Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.
<http://www.fipa.org/specs/fipa00046/>