

FOUNDATION FOR INTELLIGENT PHYSICAL AGENTS

FIPA Request Whenever Communicative Act Specification

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1 Scope

This document specifies the Request Whenever communicative act which is compliant to [FIPA00037] requirements.

2 Request Whenever

Summary	The sender wants the receiver to perform some action as soon as some proposition becomes true and thereafter each time the proposition becomes true again.
Content	A tuple of an action description and a proposition.
Description	<p><i>Request-whenver</i> allows an agent to inform another agent that a certain action should be performed as soon as a given precondition, expressed as a proposition, becomes true, and that, furthermore, if the proposition should subsequently become false, the action will be repeated as soon as it once more becomes true.</p> <p><i>Request-whenver</i> represents a persistent commitment to re-evaluate the given proposition and take action when its value changes. The originating agent may subsequently remove this commitment by performing the <i>cancel</i> action (see [FIPA00041]).</p> <p>No specific commitment is implied by the specification as to how frequently the proposition is re-evaluated, nor what the lag will be between the proposition becoming true and the action being enacted. Agents who require such specific commitments should negotiate their own agreements prior to submitting the <i>request-when</i> act (see [FIPA00058]).</p>
Formal Model	$\langle i, \text{request-whenver}(j, \langle j, \text{act} \rangle, \phi) \rangle \equiv$ $\langle i, \text{inform}(j, I_i \text{ Done}(\langle j, \text{act} \rangle, (\exists e) \text{ Enables}(e, B_j \phi))) \rangle$ $\text{FP: } B_i \alpha \wedge \neg B_i (B_i \text{ if } j \alpha \vee U_i \text{ if } j \alpha)$ $\text{RE: } B_j \alpha$ <p>Where:</p> $\alpha = I_i \text{ Done}(\langle j, \text{act} \rangle, (\exists e) \text{ Enables}(e, B_j \phi))$ <p>Agent <i>i</i> informs <i>j</i> that <i>i</i> intends that <i>j</i> will perform some <i>act</i> whenever some event causes <i>j</i> to believe ϕ.</p>
Example	<p>Agent <i>i</i> tells agent <i>j</i> to notify it whenever the price of widgets rises from less than 50 to more than 50.</p> <pre>(request-whenver :sender i :receiver j :content ((inform :sender j :receiver i :content (price widget) (> (price widget) 50)) ...)</pre>

3 References

- [FIPA00037] FIPA Communicative Act Library Specification. Foundation for Intelligent Physical Agents, 2000.
<http://www.fipa.org/specs/fipa00037/>
- [FIPA00041] FIPA Cancel Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.
<http://www.fipa.org/specs/fipa00041/>
- [FIPA00058] FIPA Request When Communicative Act Specification. Foundation for Intelligent Physical Agents, 2000.
<http://www.fipa.org/specs/fipa00058/>