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Foreword

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1 Scope

This document specifies the Propose communicative act that is compliant to [FIPA00037] requirements.
## 2 Propose

<table>
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<th>Summary</th>
<th>The action of submitting a proposal to perform a certain action, given certain preconditions.</th>
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<tbody>
<tr>
<td>Content</td>
<td>A tuple containing an action description, representing the action that the sender is proposing to perform and a proposition representing the preconditions on the performance of the action.</td>
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<tr>
<td>Description</td>
<td>Propose is a general-purpose action to make a proposal or respond to an existing proposal during a negotiation process by proposing to perform a given action subject to certain conditions being true. The actual protocol under which the negotiation process is being conducted is known either by prior agreement, or is explicitly stated in the :protocol parameter of the message. The proposer (the sender of the propose) informs the receiver that the proposer will adopt the intention to perform the action once the given precondition is met and the receiver notifies the proposer of the receiver's intention that the proposer performs the action. A typical use of the condition attached to the proposal is to specify the price of a bid in an auctioning or negotiation protocol.</td>
</tr>
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</table>

### Formal Model

\[
\langle i, \text{propose}(j, <i, \text{act}>, ) \rangle \\
\langle i, \text{inform}(j, I_j \text{Done}(<i, \text{act}>, ) ) \rangle \\
\text{FP: } B_i \quad B_i (Bif_j \quad Uif_j ) \\
\text{RE: } B_j \\
\text{Where:} \\
\quad = I_j \text{Done}(<i, \text{act}>, ) \quad I_i \text{Done}(<i, \text{act}>, )
\]

Agent \(i\) informs \(j\) that, once \(j\) informs \(i\) that \(j\) has adopted the intention for \(i\) to perform action \(\text{act}\), and the preconditions for \(i\) performing \(\text{act}\) have been established, \(i\) will adopt the intention to perform \(\text{act}\). 

### Example

Agent \(j\) informs \(i\) that it will sell 50 boxes of plums for $200.

```fipa
(propose 
  :sender j 
  :receiver i 
  :content 
    ((action j 
      (sell plum 50)) 
     (cost 200)) 
  :ontology fruit-market 
  :in-reply-to proposal2 
  :language FIPA-SL 
...)
```
3 References

http://www.fipa.org/specs/fipa00037/