Szavazó ágensek: racionális ágensek egyvéleményű közössége /4
Robert's Rules

Robert's Rules of Order Newly Revised (RONR)

Pocket Manual of Rules of Order for Deliberative Assemblies,
by then U.S. Army Colonel Henry Martyn Robert (1837–1923)
1st Edition – February 1876
11th Edition – 2011

VOTING PROTOCOL

- the assembly sits and the chair opens a session;
- a member proposes (tables) a motion;
- another member seconds the motion;
- the members debate the motion;
- the chair calls for those in favour to cast their vote;
- the chair calls for those against the motion to cast their vote;
- the motion is carried, or not, according to the standing rules of the assembly.

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Multi-agent Virtual Organization (MVO)

voter - agent who is empowered to vote;

proposer - agent who is empowered to propose motions;

seconder - agent who is empowered to second motions;

chair - agent who is qualified to conduct the procedure;

monitor - member who is to be informed of the actions of others, in particular the votes cast and the decisions reached.

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Table 1: Actions in the Voting Protocol

Action	Textual Description
$open\_session(Ag, S)$	agent Ag opens session S
$close\_session(Ag, S)$	agent Ag closes session S
$propose(Ag, M)$	agent Ag proposes motion M
$second(Ag, M)$	agent Ag seconds motion M
$open\_ballot(Ag, M)$	agent Ag opens the voting on motion M
$close\_ballot(Ag, M)$	agent Ag closes the voting on motion M
$vote(Ag, M, aye)$	agent Ag votes *for* motion M
$vote(Ag, M, nay)$	agent Ag votes *against* motion M
$abstain(Ag, M)$	agent Ag abstains on motion M
$declare(Ag, M, carried)$	agent Ag declares that motion M has carried
$declare(Ag, M, not\_carried)$	agent Ag declares that motion M has not carried
$kill(Ag, M)$	agent Ag kills motion M
$object(Ag, Act, G)$	agent Ag objects to action Act on grounds G
$sustain(Ag, Act)$	agent Ag sustains the objection Act
$overrule(Ag, Act)$	agent Ag overrules the objection Act

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Table 2: Fluents in the Voting Protocol

Fluent	Range	Textual Description
$status(M)$	{ *null*, *proposed*	motion M was proposed (by some agent A at some time T)
	seconded	motion M has been seconded (by some agent B at a later time T')
	$voting(T)$	voting on motion M is taking place from time T
	voted	voting on motion M has been closed at time T
	carried	motion M has been carried
	not_carried }	motion M has not carried
$votes(M)$	$N \times N$	2-tuple counting the votes for/against motion M
$voted(Ag, M)$	$\{nil, aye, nay, abs\}$	agent Ag has not voted (nil) or has voted for/against/abstained on motion M
$qualifies(Ag, R)$	boolean	agent Ag is qualified for the role of R
$role\_of(Ag, R)$	boolean	agent Ag occupies the role of R
$sitting(S)$	boolean	the assembly S is in session (sitting) or not
$\mathbf{pow}(Ag, Act)$	boolean	agent Ag is empowered to perform action Act
$\mathbf{per}(Ag, Act)$	boolean	agent Ag is permitted to perform Act
$\mathbf{obl}(Ag, Act)$	boolean	agent Ag is obliged to perform Act
$sanction(Ag)$	N^*	zero or more codes identifying sanctions on agent Ag

$$Action \text{ initiates } Fluent = Value \text{ at } Time \leftarrow$$
$$Condition_1 \wedge \ldots \wedge Condition_m$$
$$Fluent = Value \text{ holdsat } Time \leftarrow$$
$$Condition_1 \wedge \ldots \wedge Condition_n$$

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$$\mathbf{pow}(C, open\_session(C,S)) = true \text{ holdsat } T \leftarrow$$
$$sitting(S) = false \text{ holdsat } T \ \wedge$$
$$role\_of(C, chair) = true \text{ holdsat } T$$

$$\mathbf{pow}(A, second(A,M)) = true \text{ holdsat } T \leftarrow$$
$$status(M) = proposed \text{ holdsat } T \ \wedge$$
$$role\_of(A, seconder) = true \text{ holdsat } T$$

$$propose(A,M) \text{ initiates } status(M) = proposed \text{ at } T \leftarrow$$
$$\mathbf{pow}(A, propose(A,M)) = true \text{ holdsat } T$$

$$vote(V,M,aye) \text{ initiates } votes(M) = (F1, A) \text{ at } T \leftarrow$$
$$\mathbf{pow}(V, vote(V,M)) = true \text{ holdsat } T \ \wedge$$
$$votes(M) = (F, A) \text{ holdsat } T \ \wedge$$
$$F1 = F + 1$$
$$vote(V,M,aye) \text{ initiates } voted(V,M) = aye \text{ at } T \leftarrow$$
$$\mathbf{pow}(V, vote(V,M,\_)) = true \text{ holdsat } T$$

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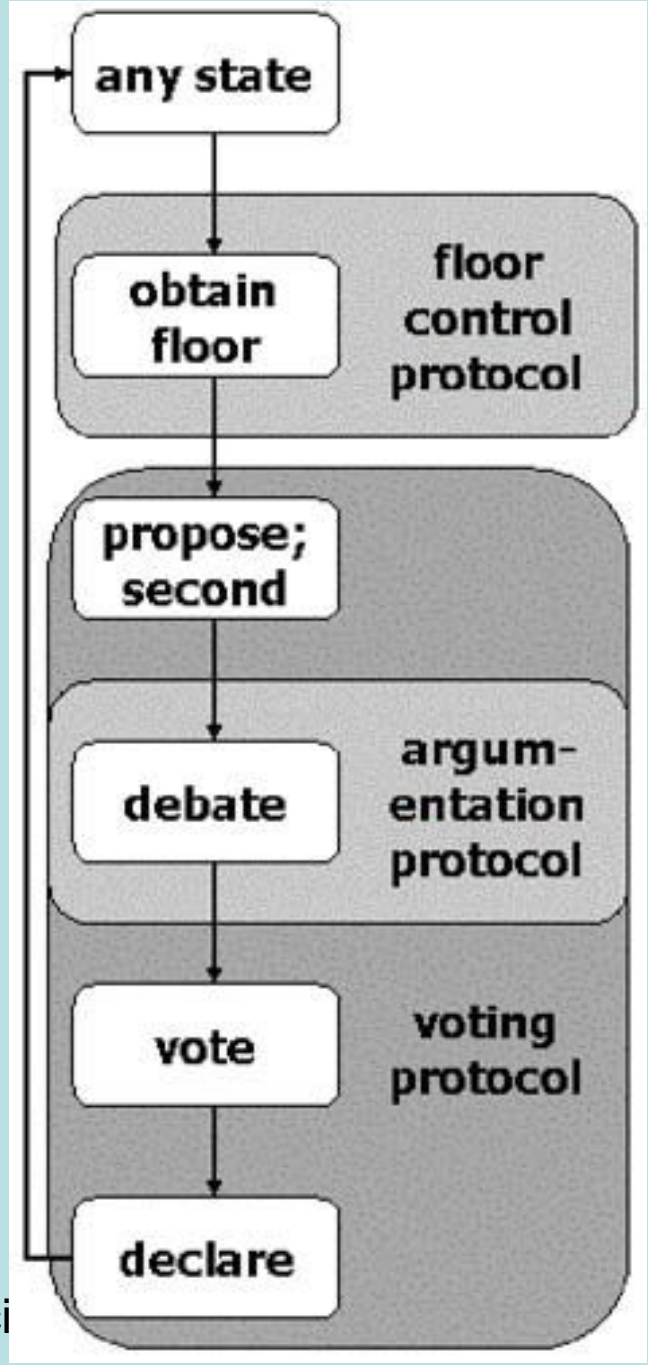
$$\mathbf{obl}(C, declare(C, M, carried)) = true \text{ holdsat } T \leftarrow$$
$$role\_of(C, chair) = true \text{ holdsat } T \wedge$$
$$status(M) = voted \text{ holdsat } T \wedge$$
$$votes(M) = (F, A) \text{ holdsat } T \wedge$$
$$F > A$$

Example

$$\mathbf{per}(C, close\_ballot(C, M)) = true \text{ holdsat } T \leftarrow$$
$$\mathbf{pow}(C, close\_ballot(C, M)) = true \text{ holdsat } T \wedge$$
$$votes(M) = (F, A) \text{ holdsat } T \wedge$$
$$(F + A) \geq 2$$
$$\mathbf{obl}(C, close\_ballot(C, M)) = true \text{ holdsat } T \leftarrow$$
$$\mathbf{pow}(C, close\_ballot(C, M)) = true \text{ holdsat } T \wedge$$
$$votes(M) = (F, A) \text{ holdsat } T \wedge$$
$$(F + A) = 3$$



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happens(open session(cAgent, sesh))
happens(propose(pAgent, m1))
happens(second(sAgent, m1))
happens(open ballot(cAgent, m1))
happens(vote(pAgent, m1, aye))
happens(vote(sAgent, m1, nay))
happens(vote(vAgent, m1, nay))
happens(revoke(sAgent, m1))
happens(vote(sAgent, m1, aye))
happens(close ballot(cAgent , m1))
happens(declare(cAgent, m1, carried))
happens(close session(cAgent, sesh))