Instruction Graph Grammar

Andrew Benson

`Program`	p	$::=$	$\mathbf{P}(vs,\ n)$	programs
`Vertices`	vs	$::=$	$\mathbf{S}(v)$	singleton
			v **::** vs	cons
`Vertex`	v	$::=$	$\mathbf{V}(n,\ c)$	vertex
`Content`	c	$::=$	**do** a **then** n	single action
			do a **until** cnd **then** n	open loop action
			if cnd **then** n **else** n	conditional
			goto n	goto
			end	termination

We let $n \in \mathbb{Z}$, the integers.

We let $a \in$ `Action`, a sort describing classes of actions, like movement, that a robot might be able to perform. A grammar defining `Action` is assumed.

We let $cnd \in$ `Condition`, a sort describing classes of conditions, like whether an object is some distance ahead, that a robot might be able to detect. A grammar defining `Condition` is assumed.