S_0	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8
\mathbf{c}	O	\mathbf{v}	f	e	f	e	f	e
O	\mathbf{v}	f	e	\mathbf{f}	e	f	e	
\mathbf{v}	\mathbf{f}	e	f	e	f	e		
\mathbf{f}	\mathbf{e}	\mathbf{f}	e	f	e			
e	\mathbf{f}	e	\mathbf{f}	e				
\mathbf{f}	\mathbf{e}	\mathbf{f}	e					
e	\mathbf{f}	e						
\mathbf{f}	e							
e								