chain-replication-acks-refines[13,45]

$\forall es$:ES, Cmd, Rsp:Type, $isupdate$:($Cmd \to \mathbb{B}$), $Delta$:(($\{c$:$Cmd|\ \uparrow(isupdate(c))\}$ List)$\to Rsp$),
Q:(($\{c$:$Cmd|\ \uparrow(isupdate(c))\}$ List)$\to\{c$:$Cmd|\ \neg(\uparrow(isupdate(c)))\} \to Rsp$),
In:AbsInterface(Cmd), Out:AbsInterface(Rsp), Sys:AbsInterface(Cmd List),
Ack:AbsInterface($\mathbb{N}$), f:sys-antecedent(es;Sys), g:sys-antecedent(es;Ack).
chain-replication-acks{i:l}
(es; Cmd; Rsp; $isupdate$; In; Out; Sys; Ack; f; g; $Delta$; Q)
$\Rightarrow$ abstract-chain-replication{i:l}
(es; Cmd; Rsp; $isupdate$; In; Out; Sys; f; $Delta$; Q)

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http://www.nuprl.org/FDLcontent/p0_963683_/p0_379411_{chain-replication-acks-refines}.html