es-leaks[11,40]

e leaks x to e'
$\equiv_{\text{def}}$ $\exists a$:Atom1
(loc(e) $\parallel$ a
& ($\neg$state when $e\backslash\backslash x$:state@loc(e)$\backslash\backslash x \| a$)
& e receives $\parallel$ a
& (($\uparrow$isrcv(e')) c$\wedge$ (sender(e') = e & ($\neg$val(e'):valtype(e')$\|a$))))

clarification:

es-leaks(es;e;x;e')
$\equiv_{\text{def}}$ $\exists a$:Atom1
(es-atom(es;es-loc(es; e);a)
& ($\neg$free-from-atom{1}(es-state-without(es;es-loc
(es; e);x);es-state-when-without(es;e;x);a))
& es-rcv-atom(es;e;a)
& (($\uparrow$es-isrcv(es; e'))
c$\wedge$ (es-sender(es; e') = $e \in$ es-E(es)
& ($\neg$free-from-atom{1}(es-valtype(es; e');es-val(es; e');a)))))

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http://www.nuprl.org/FDLcontent/p0_963683_/p58_112850_{es-leaks}.html