

<p>An Event-B Specification of m0 Creation Date: 7 Sep 2010 @ 02:46:00 PM</p>
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**MACHINE** m0

**SEES** c0

**VARIABLES**

machineMoney  
coin  
stock

**INVARIANTS**

machineMoneyType :  $machineMoney \in \mathbb{N}$   
coinType :  $coin \in ValidCoin$   
stockType :  $stock \in \mathbb{N}$   
machineInvariant :  $productInitAmount * ValueCoin(ACCEPTED\_COIN) = machineMoney + stock * ValueCoin(ACCEPTED\_COIN)$

**EVENTS**

**Initialisation**

begin  
machineMoneyInit :  $machineMoney := 0$   
coinInit :  $coin := NO\_COIN$   
stockInit :  $stock := productInitAmount$   
end

**Event** Buy  $\hat{=}$

when  
correctCoin :  $coin = ACCEPTED\_COIN$   
stockAvailable :  $stock > 0$   
then  
dispenseProduct :  $stock := stock - 1$   
increaseMoney :  $machineMoney := machineMoney + ValueCoin(coin)$   
clearCoinSlot :  $coin := NO\_COIN$   
end

**Event** insertCustomerCoin  $\hat{=}$

any  
coinCustomer  
where  
coinCustomerType :  $coinCustomer = ACCEPTED\_COIN$   
coinValue :  $coin = NO\_COIN$   
then  
insert :  $coin := coinCustomer$   
end

**Event** reset  $\hat{=}$

when  
emptyStock :  $stock = 0$   
then  
reStock :  $stock := productInitAmount$   
emptyMachineMoney :  $machineMoney := 0$   
end

**END**