Model-Based Testing with Smartesting CertifyIt

Specification of the Automated Teller Machine v1.0

The behaviour of the Automated Teller Machine we will test follows the process described hereafter.

At the initial state, the ATM waits for a customer to insert its credit card.

Once a card has been inserted, the ATM verifies it. If the card cannot be used (unreadable, unknown) it is ejected. If the card is suspended it is kept by the ATM. If the card is valid, the ATM displays the main menu. From there, the customer can:
- consult his/her account (if the card issuer is the ATM's owner)
- withdraw money
- eject his/her card

The account consultation displays the balance of the bank account associated to the card, and then returns to the main menu.

To withdraw money, the customer has first to authenticate using a pin code. After 3 unsuccessful attempts, the card is blocked and ejected. Also, if the card is already blocked, it is ejected. Once the user is authenticated, the system asks him for the amount of money he wants to withdraw. If the balance on the associated account is sufficient, the transaction is validated and the card is ejected. Once the card is removed from the card reader, the transaction is validated (i.e. the account is debited) and the bills pop out. The user has 6 seconds to take the bills. After this delay, the ATM takes the bills back.

At each prompt, the user can eject his card by pressing the "Annuler" button.

Once the card is ejected, whatever the reason, the user has 6 seconds to take it back. After that delay, the ATM keeps the card, and returns to the initial state.

Requirements table (to complete)

This table traces the requirements that appear in the test model. Complete the "Identifier" column with the identifiers that are used in the model for the corresponding requirements.

Informal requirement description	Operation	Identifier
Card insertion and verification		
A valid card displays the main menu		
An unreadable card has to be ejected		
An expired card has to be ejected		
An unknown card has to be ejected		
An suspended card is kept by the ATM		
PIN verification		
A correct pin resets the retry counter		
After 3 unsuccessful attempts the card is blocked and ejected		
Retry counter decreases at each failed attempt		
Card ejection		
After 6 seconds, if not taken by the user, the card is kept by the ATM		
Bills ejection		
After 6 seconds, if not taken by the user the bills are kept by the ATM		
Amount selection		
The user should not be able to withdraw more money than he has		
If the amount to withdraw is valid, the card is ejected		
Transaction validation		
The user must take his card to get the bills		
The transaction is validated once the user has taken back his card		

Additional requirements:

1. Once a card is inserted, it is impossible to get bills without a successful authentication.

2. Retrieving the card necessarily precedes taking the bills.