

ZIPCT Test

Here, when ZIPC is tested (simulation and animation), it introduces the method of solving the problem that cannot be solved up to now by using the new function with ZIPC V10.

Problem of existed ZIPC

The following problems existed though the test of past ZIPC was able to confirm the operation by using the state transition specification and using the simulation and animation. (Fig1 to Fig3)

【Problem 1】
Event is sent only by unit

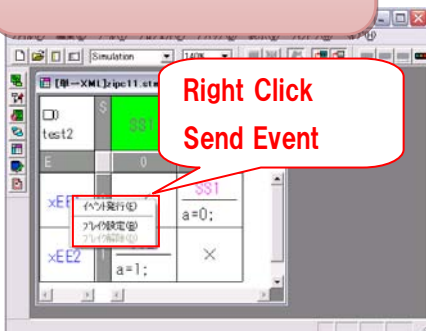


Fig1 Problem of event send

【Problem 2】
Because the replay function was not able to trace the variable, it was not easy to debug.

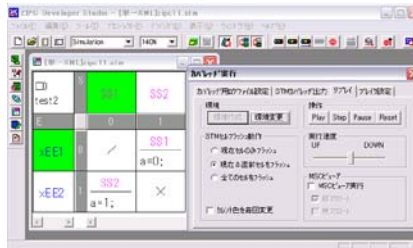


Fig2 Problem of debug

【Problem 3】
There was a possibility of overlooking it to confirm the operation in watching.



Fig3 Problem of test

Solution for the problems

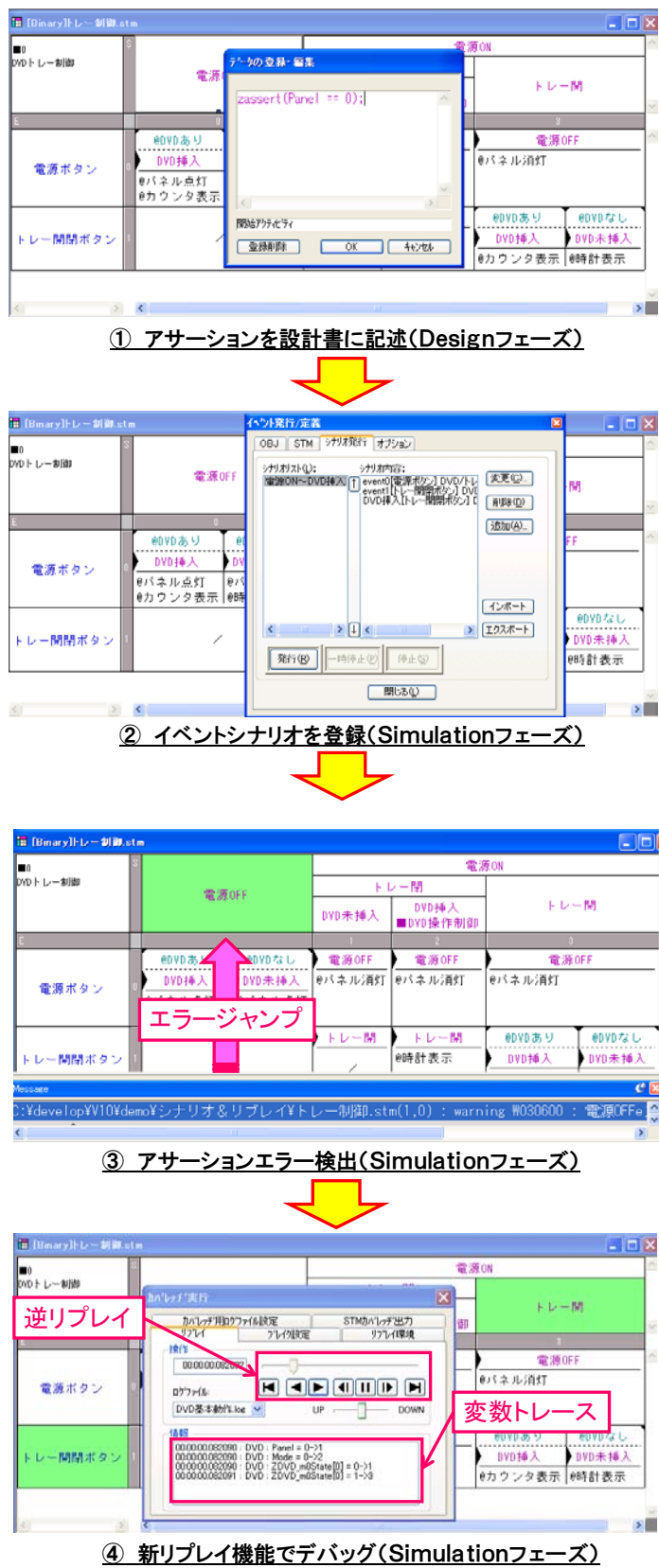
To solve these problems, the new features and functions are added in ZIPC V10. The methods of solutions are following (Table1).

Table1 The solution methods of ZIPC Test(solution, animation).

Problem No	ZIPC V10 New Feature	Solution method	Merit
1	Event scenario issue function	The scenario of the event can be registered in ZIPC V10, the scenario be executed at a time, and it becomes easy to execute again though the event issue function of past ZIPC issued the event one by one.	If the event scenario is made once, the time of the user operation can be saved.
2	New replay function (Variable trace & Reverse-replay)	Because it comes to be able to trace the value of the variable by replay, and the reverse-replay function was added, it is possible to trace it from the place felt to find the mistake in operation.	The debugging efficiency of the state transition model goes up by a variable trace and reverse-replay.
3	Assertion judgment function	The assertion can be described from ZIPC V10 in the state transition matrix, and the character to have to fill with the state etc. can be described.	It is possible to verify it strictly by the assertion judgment.

Operation

When the method of settlement using the new features included of ZIPC V10 is brought together, it becomes the following procedures (Fig4).



① The assertion is described in specification.

When the state transition matrix model is designed, the assertion is described in specification. When not satisfying it with the simulation and animation, the assertion described in specification displays the error in the message window of ZIPC.

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例) zassert( value_A == true )
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② The event scenario is registered.

Next, after the execution environment is generated with the simulation phase, the event scenario is registered. The user can freely make the event scenario. Because it is possible to execute it as it is when executing it again if the event scenario is registered once, time can be saved.

③ Assertion error detection.

Thirdly, the ZIPC test (simulation or animation) is actually executed (At this time, the log is generated).

When the event scenario made by two is executed, and the assertion error is detected, it displays it in the message window of ZIPC.

④ It debugs by the new replay function (variable trace & reverse-replay).

It is possible to debug it while tracing the variable from the log by the replay function when the assertion error is detected. Moreover, it becomes easy to debug by reverse-replay that reproduces contrary to the execution order.

Fig4 Solution for the problem(Ex. Of Simulation)