

周报告-SymTA/S试用

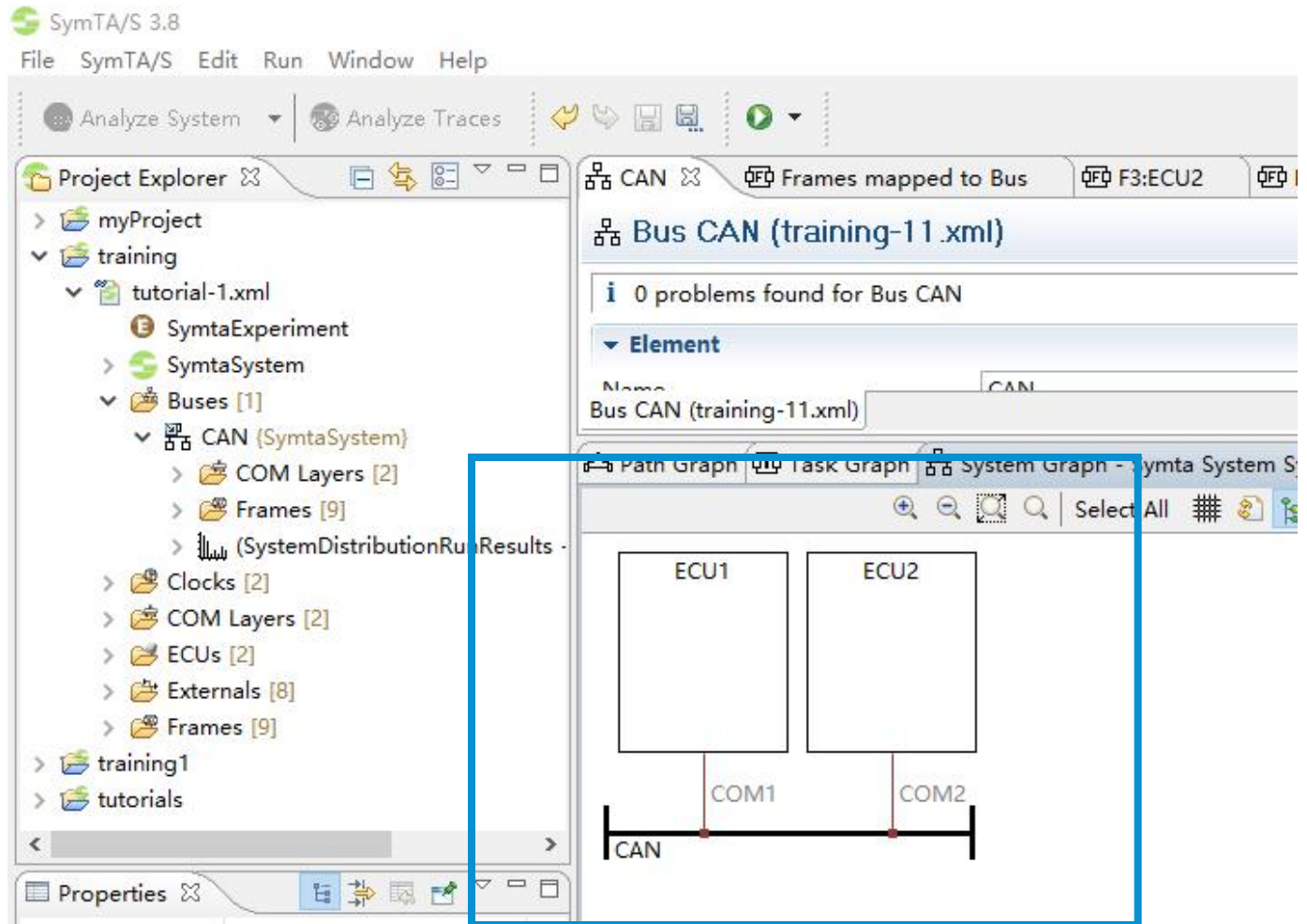
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SYMTA·VISION

系统架构

单个CAN总线
两个ECU



报文属性

报文大小、优先级、发送周期等等

The screenshot displays the SymTA/S 3.8 software interface. The Project Explorer on the left shows a hierarchy: tutorial-1.xml > SymtaExperiment > SymtaSystem > Buses [1] > CAN (SymtaSystem) > COM Layers [2] > Frames [9]. The main window shows a table of CAN frames mapped to a bus.

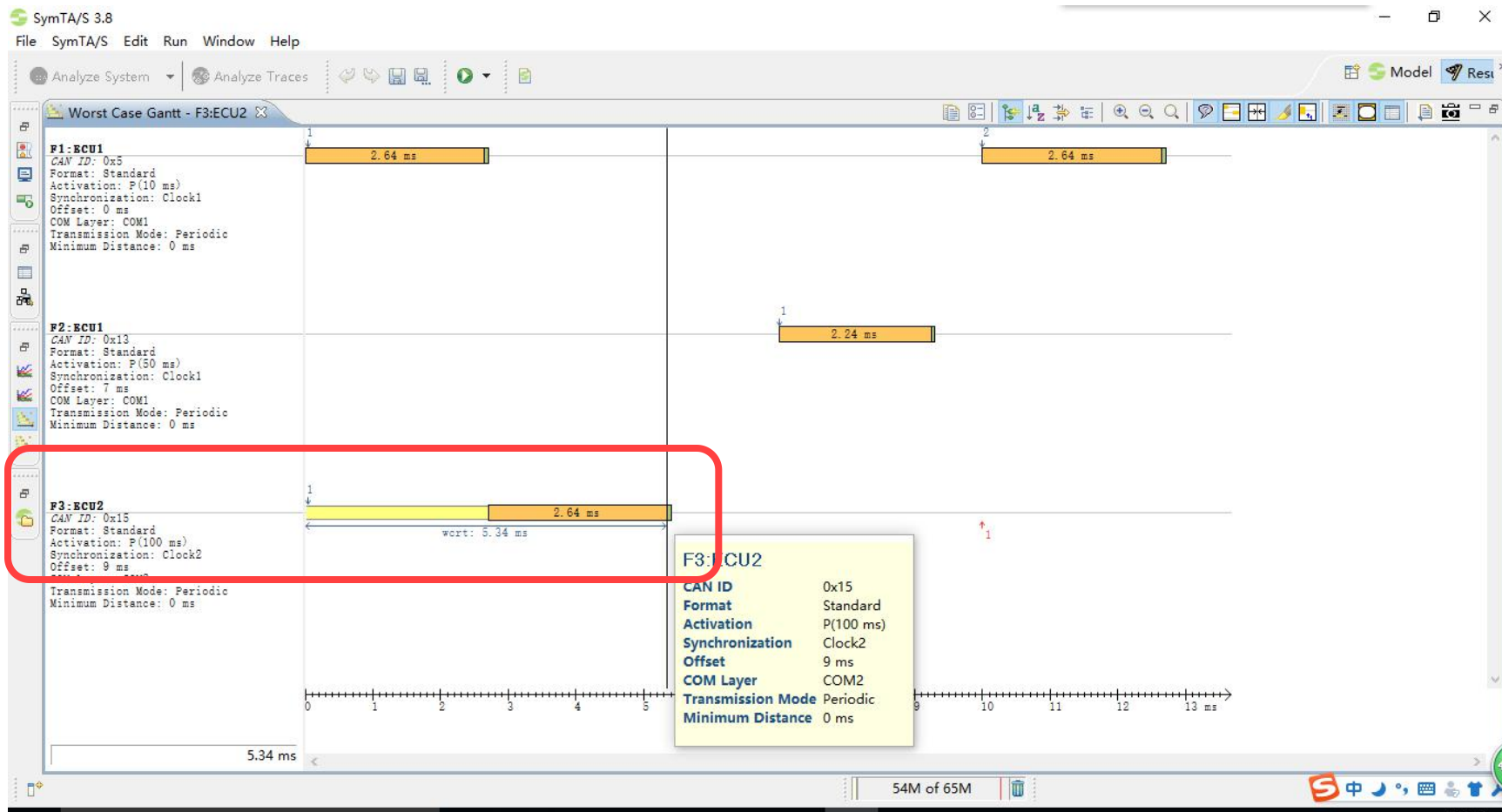
| | Element | | CAN Frame Parameter | | | Frame | | | | Internal | Size | Synchron | |
|----|----------|---------|---------------------|----------|--------------|------------------|-----------------|---------------|----------|------------|-----------|----------|---------|
| | Name | Parents | Format | CAN ID | Bit Stuffing | Minimum Distance | Transm...n Mode | Receiver ECUs | Use PDUs | Activation | Size | Synchron | |
| 1 | F1:ECU1 | F1:ECU1 | COM1 | Standard | 0x5 | -1 | 0 ms | Periodic | <empty> | IfExists | P(10 ms) | [8;8] | Clock1 |
| 2 | F2:ECU2 | F1:ECU2 | COM2 | Standard | 0x7 | -1 | 0 ms | Periodic | <empty> | IfExists | P(50 ms) | [8;8] | Clock2 |
| 3 | F3:ECU1 | F2:ECU1 | COM1 | Standard | 0x13 | -1 | 0 ms | Mixed | <empty> | IfExists | P(25 ms) | [6;6] | Clock1 |
| 4 | F2:ECU2 | F2:ECU2 | COM2 | Standard | 0x3 | -1 | 0 ms | Mixed | <empty> | IfExists | P(50 ms) | [4;4] | Clock2 |
| 5 | F3:ECU1 | F3:ECU1 | COM1 | Standard | 0xc | -1 | 0 ms | Direct | <empty> | IfExists | No Event | [8;8] | <empty> |
| 6 | F3:ECU2 | F3:ECU2 | COM2 | Standard | 0xa | -1 | 0 ms | Periodic | <empty> | IfExists | P(100 ms) | [8;8] | Clock2 |
| 7 | F4:ECU2 | F4:ECU2 | COM2 | Standard | 0x18 | -1 | 0 ms | Direct | <empty> | IfExists | No Event | [8;8] | <empty> |
| 8 | F5:ECU2 | F5:ECU2 | COM2 | Standard | 0x11 | -1 | 0 ms | Direct | <empty> | IfExists | No Event | [6;6] | <empty> |
| 9 | F6:ECU2 | F6:ECU2 | COM2 | Standard | 0x21 | -1 | 0 ms | Direct | <empty> | IfExists | No Event | [8;8] | <empty> |
| 10 | newFrame | <empty> | <n/a> | <n/a> | <n/a> | <n/a> | 0 ms | None | <empty> | IfExists | No Event | <...> | <empty> |

分析结果

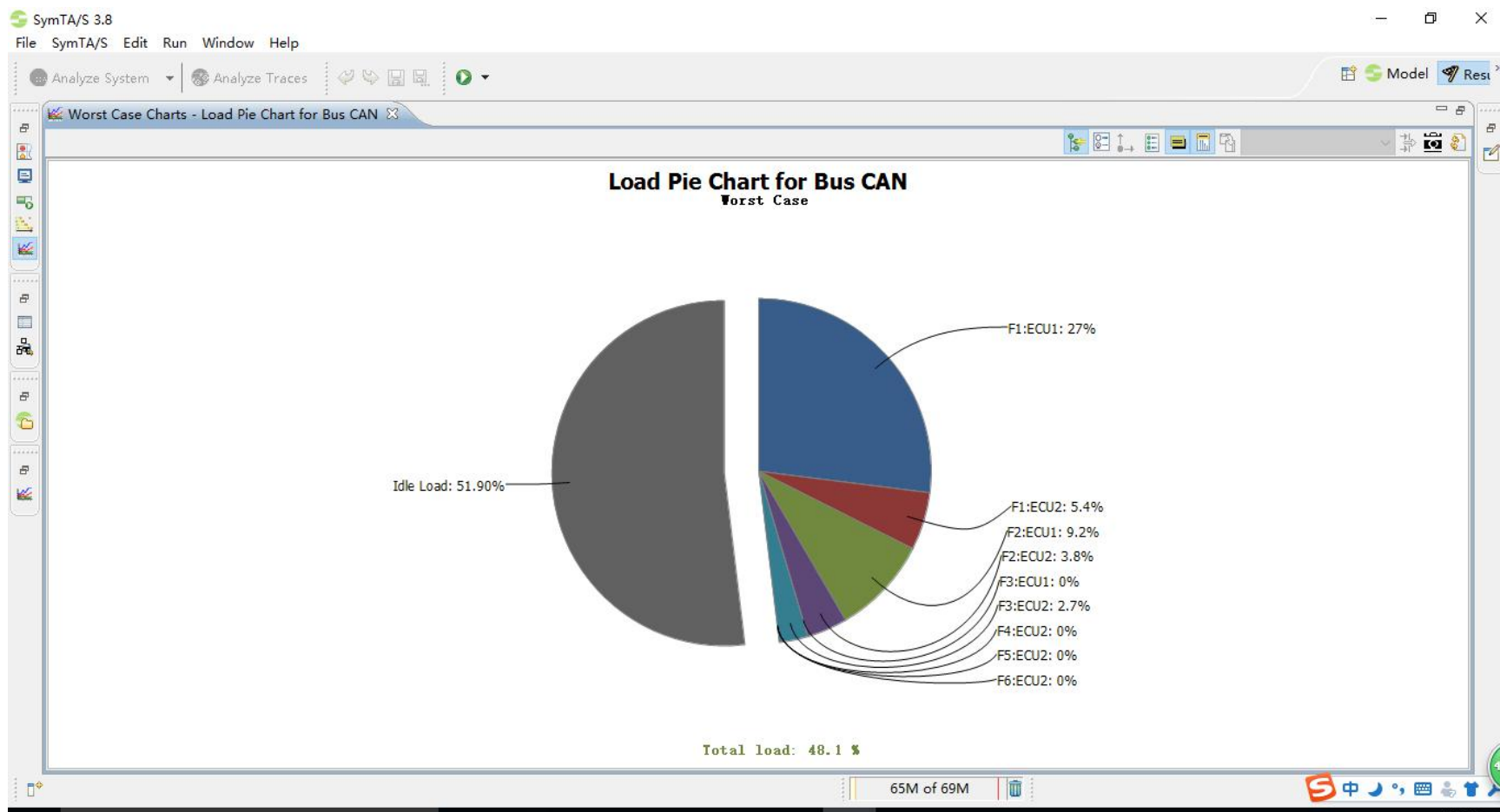
消息的响应时间、占用时间、负载等等


| | Ex...er | Load | | | Output Events | | | Resourc...on Time | Response Time | |
|---------------------------------------|---------|------|-------|-----------|-------------------|-----------------|-----------------|-------------------|-----------------|------------------|
| | | Max | Total | Execution | Schedul...verhead | Activation | Synchronization | Offset | Virtual TCore | Value |
| <input checked="" type="checkbox"/> 1 | F1:ECU1 | 1 | 0.27 | 0.264 | 0.006 | P(10 m...98 ms) | Clock1 | 2.16 m | [2.16 ...64 ms] | [2.16 ...14 ms] |
| <input checked="" type="checkbox"/> 2 | F1:ECU2 | 1 | 0...4 | 0.0528 | 0.0012 | P(50 m...78 ms) | Clock2 | 2.16 m | [2.16 ...64 ms] | [2.16 ...94 ms] |
| <input checked="" type="checkbox"/> 3 | F2:ECU1 | 6 | 0...2 | 0.0896 | 0.0024 | P(25 m...4 ms) | Clock1 | 8.84 m | [1.84 ...24 ms] | [1.84 m...84 ms] |
| <input checked="" type="checkbox"/> 4 | F2:ECU2 | 2 | 0...8 | 0.0368 | 0.0012 | P(50 m...92 ms) | Clock2 | 40...ms | [1.52 ...84 ms] | [1.52 ...44 ms] |
| <input checked="" type="checkbox"/> 5 | F3:ECU1 | 5 | 0 | 0 | 0 | No Event | <empty> | <empty> | [2.16 ...64 ms] | [2.16 m...44 ms] |
| <input checked="" type="checkbox"/> 6 | F3:ECU2 | 1 | 0...7 | 0.0264 | 0.0006 | P(100 ...8 ms) | Clock2 | 11...ms | [2.16 ...64 ms] | [2.16 ...94 ms] |
| <input checked="" type="checkbox"/> 7 | F4:ECU2 | 7 | 0 | 0 | 0 | No Event | <empty> | <empty> | [2.16 ...64 ms] | [2.16 m...34 ms] |
| <input checked="" type="checkbox"/> 8 | F5:ECU2 | 3 | 0 | 0 | 0 | No Event | <empty> | <empty> | [1.84 ...24 ms] | [1.84 m...04 ms] |
| <input checked="" type="checkbox"/> 9 | F6:ECU2 | 1 | 0 | 0 | 0 | No Event | <empty> | <empty> | [2.16 ...64 ms] | [2.16 m...74 ms] |

分析结果-甘特图



分析结果-总线负载



- 
- SymTA/S:
 - 验证总线/网络的时间特性 (CAN和FlexRay)
 - CAN和FlexRay调度分析和优化
 - 有网关系统的端到端的时间分析
 - 还没有确定好具体的研究点、问题、思路...



THANKS