



PROJECT DOCUMENTATION

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Synopse SQLite3/mORMot Framework Documentation.

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Document Purpose

The *Design FMEA File* document purpose is to list *Failure Modes and Effects Analysis* (FMEA) for the *Synopse mORMot Framework* project.

The current revision of this document is 1.17.

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1. Introduction

The *Design FMEA File* (FMEA) document is a reference document used to list the *Failure Modes and Effects Analysis* (FMEA) identified for the *Synopse mORMot Framework* library.

The "*Failure modes and effects analysis*" (FMEA) is a procedure in operations management for analysis of potential failure modes within a system for classification by severity or determination of the effect of failures on the system. *Failure modes* are any errors or defects in a process, design, or item, especially those that affect the customer, and can be potential or actual. *Effects analysis* refers to studying the consequences of those failures.

In practice, a Risk Assessment team starts with a block diagram of a system. The team then considers what happens if each block of the diagram fails, and fills in a table in which failures are paired with their effects and an evaluation of the effects. The design of the system is then corrected, and the table adjusted until the system is known not to have unacceptable problems.

This *Design FMEA File* (FMEA) document lists most FMEA items identified as possible Software Failure for the *Synopse mORMot Framework*.

1.1. Risk Assessment

In the following *Design FMEA File* (FMEA) document, a numerical Risk Assessment is given for every FMEA item, according to the *Risk Assessment Scale* table below.

A summary explanation is indicated, together with the names of those who made each evaluation.

Risk Assessment Scale

Severity: identify the severity of incorrect implementation

3 - High	Potentially affects a result or safety
2 - Med	Potentially effects one or multiple features for intended operation
1 - Low	Cosmetic or no effect to intended operation

Probability: identify the probability of incorrect or incomplete implementation

3 - High	No documentation and not familiar with the code area
2 - Med	Documentation but not familiar/familiar but no documentation

1 - Low	Documentation and familiar with the code
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Occurrence: identify the reproducibility of the defect before correction

3 - High	Reproducible: failure inevitable or repeated (>25% failure rate)
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2 - Med	Intermittent or recurring: occasional failures (5-25% failure rate)
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1 - Low	One time: relatively few or remote likelihood of failure (<5% failure rate)
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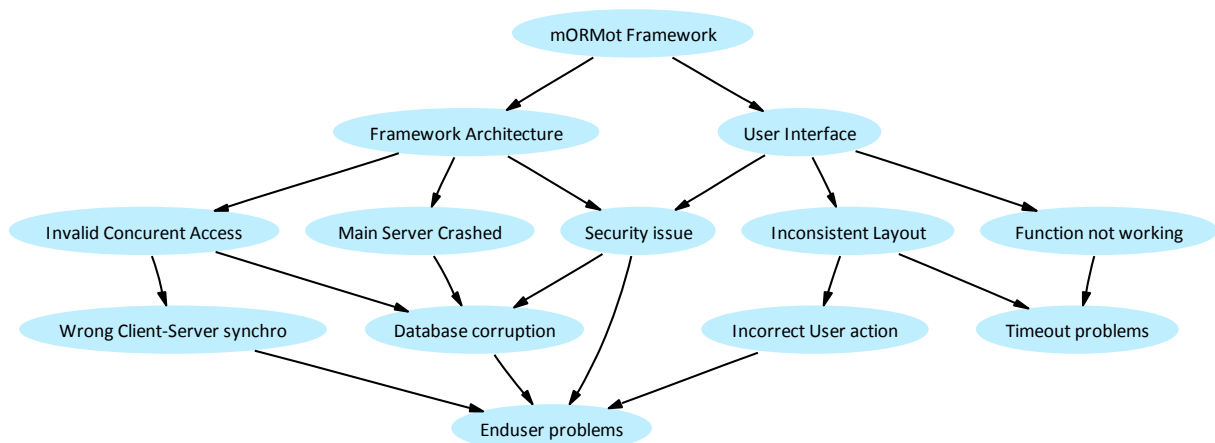
1.2. Responsibilities

- Synopse will try to correct any identified issue;
- The Open Source community will create tickets in a public Tracker web site located at <http://synopse.info/fossil..> ;
- Synopse work on the framework is distributed without any warranty, according to the chosen license terms;
- This documentation is released under the GPL (GNU General Public License) terms, without any warranty of any kind.

2. FMEA

2.1. Fault Tree

Here is the Fault Tree of the framework, displayed in a graphical way:



mORMot Framework Fault Tree