<testing\_knowledge\_base>

<priority\_levels>

<priority level="Critical">

<description>Issues that could cause catastrophic system failure or data loss</description>

<criteria>

- Affects core business functionality

- Blocks entire features or workflows

- Has significant financial impact

- Affects data integrity

</criteria>

<examples>

- Payment processing failure

- User authentication breakdown

- Data corruption scenarios

</examples>

</priority>

<priority level="High">

<description>Major functionality issues that significantly impact user experience</description>

<criteria>

- Affects major business workflows

- Has workarounds but they're complex

- Impacts significant user base

- Performance degradation above threshold

</criteria>

<examples>

- UI rendering issues

- Slow response times

- Feature partial failure

</examples>

</priority>

<priority level="Medium">

<description>Issues that affect non-critical functionality</description>

<criteria>

- Has simple workarounds

- Affects minor features

- Limited user impact

- Non-critical performance issues

</criteria>

<examples>

- Minor UI glitches

- Non-critical feature bugs

- Documentation inconsistencies

</examples>

</priority>

<priority level="Low">

<description>Cosmetic or minor issues with minimal impact</description>

<criteria>

- No functional impact

- Aesthetic issues only

- Very limited user base affected

</criteria>

<examples>

- Styling inconsistencies

- Typos in non-critical text

- Nice-to-have improvements

</examples>

</priority>

</priority\_levels>

<iso\_25010\_categories>

<category name="Functional Suitability">

<subcategories>

<subcategory name="Functional Completeness">

<description>Degree to which the set of functions covers all specified tasks and objectives</description>

<test\_focus>Verify all specified functions are implemented</test\_focus>

</subcategory>

<subcategory name="Functional Correctness">

<description>Degree to which a product provides correct results with needed precision</description>

<test\_focus>Validate accuracy of calculations and data processing</test\_focus>

</subcategory>

<subcategory name="Functional Appropriateness">

<description>Degree to which functions facilitate accomplishment of specified tasks</description>

<test\_focus>Evaluate efficiency of function implementation</test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Performance Efficiency">

<subcategories>

<subcategory name="Time Behaviour">

<description>Response and processing times and throughput rates</description>

<test\_focus>Measure response times and transaction rates</test\_focus>

</subcategory>

<subcategory name="Resource Utilization">

<description>Amounts and types of resources used</description>

<test\_focus>Monitor CPU, memory, disk usage</test\_focus>

</subcategory>

<subcategory name="Capacity">

<description>Maximum limits of product parameters</description>

<test\_focus>Test system under maximum load conditions</test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Compatibility">

<subcategories>

<subcategory name=" Interoperability">

<description>Degree to which a product can exchange information with other products and systems</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Co-existence">

<description>Degree to which a product can perform its required functions efficiently whilst sharing a common environment and resources without impact on other products</description>

<test\_focus></test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Usability”>

<subcategories>

<subcategory name="Appropriateness Recognisability">

<description>Degree to which a user can recognise whether a product is appropriate for their needs</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Learnability">

<description>Degree to which the functions of a product can be learnt to be used by specified users in a specified amount of time</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Operability">

<description>Degree to which a product has attributes that make it easy to operate</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="User Error Protection">

<description>Degree to which a system prevents users against operation errors</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="User Interface Aesthetics">

<description>Degree to which a user interface enables pleasing and satisfying interaction for the user</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Accessibility">

<description>Degree to which a product or system can be used by people with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use</description>

<test\_focus></test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Reliability">

<subcategories>

<subcategory name="Maturity">

<description>Degree to which a system meets needs for reliability under normal operation</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Availability">

<description>Degree to which a system is operational and accessible when required for use</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Fault Tolerance">

<description>Degree to which a system operates as intended despite the presence of hardware or software faults</description>

<test\_focus></test\_focus>

</subcategory>

<subcategory name="Recoverability">

<description>Degree to which, in the event of an interruption or a failure, a system can recover the data directly affected and re-establish the desired state of the system</description>

<test\_focus></test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Security">

<subcategories>

<subcategory name=" Confidentiality>

<description>Degree to which a product ensures that data are accessible only by those authorised to have access</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Integrity">

<description>Degree to which a system prevents unauthorised access to, or modification of, computer programs or data</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Non-repudiation">

<description>Degree to which actions or evens can be proven to have taken place, so that the events or actions cannot be repudiated later</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Accountability">

<description>Degree to which the actions of an entity can be traced uniquely to the entity</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Authenticity">

<description>Degree to which the identity of a subject or resource can be proved to be the one claimed</description>

<test\_focus> </test\_focus>

</subcategory>

</subcategories>

</category>

<category name="Maintainability">

<subcategories>

<subcategory name="Modularity">

<description>Degree to which a system is composed of discrete components such that a change to one component has minimal impact on other components</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Reusability">

<description>Degree to which an asset can be used in more than one system, or in building other assets</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Analysability">

<description>Degree of effectiveness and efficiency with which it is possible to assess the impact on a system of an intended change to one or more of its parts, or to diagnose a product for deficiencies or causes of failure, or to identify parts to be modified</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Modifiability">

<description>Degree to which a system can be effectively and efficiently modified without introducing defects or degrading existing product quality</description>

<test\_focus> </test\_focus>

</subcategory>

<subcategory name="Testability">

<description>Degree of effectiveness and efficiency with which test criteria can be established for a product and tests can be performed to determine whether those criteria have been met</description>

<test\_focus> </test\_focus>

</subcategory>

</subcategories>

</category>

</iso\_25010\_categories>

<requirement\_categories>

<category name="Functional">

<description>Specific functions the system must perform</description>

<examples>

- User authentication

- Data processing rules

- Business logic implementation

</examples>

</category>

<category name="Non-Functional">

<description>Quality attributes and constraints</description>

<examples>

- Performance requirements

- Security requirements

- Usability requirements

</examples>

</category>

<!-- Additional requirement categories -->

</requirement\_categories>

</testing\_knowledge\_base>

<query\_handlers>

<handler type="priority\_explanation">

<trigger\_words>priority, importance, severity</trigger\_words>

<response\_template>

The {priority\_level} priority indicates {description}.

This is used when:

{criteria}

For example: {examples}

</response\_template>

</handler>

<handler type="iso\_category\_explanation">

<trigger\_words>ISO, category, classification</trigger\_words>

<response\_template>

The ISO 25010 category {category\_name} refers to {description}.

When testing, we focus on: {test\_focus}

</response\_template>

</handler>

</query\_handlers>

<relationship\_rules>

<rule>

<name>priority\_requirement\_mapping</name>

<description>How priority levels map to requirement types</description>

<mappings>

<mapping>

<priority>Critical</priority>

<requirement\_types>Core Functional, Security, Data Integrity</requirement\_types>

</mapping>

<!-- Additional mappings -->

</mappings>

</rule>

</relationship\_rules>