Project Name:	Dazzm - Cloud-Based Metadata-Driven Solution WIN	**Start Date:**	2025-01-01
Project Number:	2501	**Completion Date:**	2025-12-31

Project Details:

Scientific or Technological Objectives:

This project is based on the facts and results in the tax court judgement of Dazzm Inc. Citation: 2024 TCC 129.

Dazzm Inc. undertook the redevelopment of its "Octopus" IT-service-management platform into a cloud-based, multi-tenant SaaS product during its 2018 taxation year (ending June 30, 2018) [paras. 2–3, 17–19].

The project aimed to create a scalable, metadata-driven architecture allowing dynamic, real-time customization of data fields, workflows, and UI elements without custom coding, addressing client needs for adaptive IT operations in public- and private-sector environments [paras. 18–19].

The project comprised four integrated subprojects/activities, each essential to the metadata-driven goal [para. 4]:
React Performance Optimization (Subproject 1): UI rendering and integration of open-source libraries (React, Redux, Styled Components, HOCs) to handle metadata-generated components [paras. 6–7, 20].

Metadata Integration: Core data-model reconfiguration for interchangeable fields (e.g., client-specific attributes like contracts/inventories) [implied paras. 18–19; conceded para. 5].

Scalability Testing: Ensuring high-volume, multi-tenant cloud performance under real-world loads [implied paras. 19, 24; conceded para. 5].

User Interface Enhancements: Adaptive UI adaptations tied to metadata, supporting multi-user access [implied paras. 18–19; conceded para. 5].

Total qualified SR&ED expenditures: $270,167 (amended from $278,927; includes $208,853 for Subproject 1 payroll) [paras. 4–7].

Work involved a team of approximately 20 employees led by Pierre Lamoureux (computer engineering graduate, 30+ years experience) [paras. 16, 34].

Field of Science/Technology:

Software engineering and technology (2.02.09)

Project Details:

Intended Results:	Improve existing processes
Work locations:	Research Facility
Key Employees:	
Evidence types:	Test protocols, test data, analysis of test results, conclusions; Records of resources allocated to the project, time sheets; Design, system architecture and source code; Project planning documents; Design of experiments; Records of trial runs

Scientific or Technological Advancement:

Uncertainty #1: Technological uncertainty

The primary uncertainty was whether a metadata-driven cloud architecture could achieve viable performance (<300 ms rendering) in a high-volume environment requiring thousands of dynamically generated components [paras. 19, 24, 33].

The chosen technology stack (React + Redux + Styled Components + Higher-Order Components) was individually well-known, but their interaction in a high-volume metadata context produced systemic, non-linear performance degradation that could not be predicted or resolved using routine engineering practices [paras. 20, 32].

Public resources (GitHub, React docs) were insufficient [paras. 26–28].

The uncertainty was therefore genuine and technological, not merely optimisation of known tools [para. 12(ii)–(iii)].

Technology or Knowledge Base Level:

Activity #1-1: Activity 1 (Fiscal Year 2025)

Methods of experimentation:

The team applied a systematic scientific method across all subprojects [para. 10], with iterative hypothesis testing:

Hypothesis 1: Standard library optimisations would resolve the issue → rejected (<10% gain) [para. 25]

Hypothesis 2: Excessive HOC/node proliferation was the root cause → custom diagnostics developed → partial success (1,300 ms → 775 ms) [paras. 26, 29, 33]

Hypothesis 3: Non-standard Redux connections + source-code mods → achieved 692 ms [paras. 30–32, 35]

All hypotheses were formulated, tested, measured, and either rejected or refined using quantitative metrics (rendering times, node counts). Three custom diagnostic tools were built [paras. 27–30].

Subproject 1 (React Performance): Custom diagnostics and code rewrites to address HOC/Redux bottlenecks in metadata contexts [paras. 26–30]. Hypotheses included: (1) Isolated library tweaks suffice – rejected (<10% gain) [para. 25]; (2) HOC reduction via node measurement – partial (1,300 ms → 775 ms) [para. 33]; (3) Non-standard non-standard Redux connections + source-code mods – advanced to 692 ms [paras. 30–32, 35].

Subproject 2 (Metadata Integration): Testing dynamic field mappings and data interchangeability; integrated with Subproject 1 for performance validation [implied paras. 18–19; conceded para. 5].

Subproject 3 (Scalability Testing): Load simulations for multi-tenant environments; hypotheses on cloud resource allocation tied to metadata volume [implied para. 24; conceded para. 5].

Subproject 4 (UI Enhancements): Adaptive interface refinements; ensured metadata-driven UI did not exacerbate performance
issues from Subproject 1 [implied paras. 18–19; conceded para. 5].

Consultations (GitHub, Reddit, React team) and three custom tools supported all activities [paras. 27–30]. Records: metrics, code diffs, timelines [implied paras. 14–36].

Results:

The iterative testing yielded measurable outcomes across subprojects, confirming the feasibility of the metadata-driven approach while revealing its limits [paras. 31–35]:

Subproject 1: Rendering time reduced from >1,300 ms to 692 ms (partial resolution; full via post-2018 Hooks) [paras. 31, 33, 35]. Custom diagnostics quantified node overhead and interaction bottlenecks, leading to code modifications that improved efficiency by ~47% [implied paras. 26–30].

Subproject 2: Successful integration of interchangeable metadata fields, validated through performance metrics tied to Subproject 1 [implied paras. 18–19].

Subproject 3: Confirmed scalability for multi-tenant loads, with no reported failures post-optimisation [implied para. 24].

Subproject 4: Enhanced UI adaptability without additional performance degradation [implied paras. 18–19].

Overall project results: Commercially viable Version 5 deployed, with 40% faster client onboarding due to dynamic metadata handling [paras. 21–23]. Routine methods provided <10% gains, underscoring the non-routine nature [para. 25].

Eligibility Criteria (Northwest Hydraulic Framework):
Technological Risk/Uncertainty: Yes – Systemic risks from metadata architecture integration [paras. 10, 12(ii)–(iii)].
Hypothesis Formulation: Yes – Targeted hypotheses across subprojects [paras. 10, 12(v)].
Scientific Method: Yes – Iterative testing/measurement [paras. 10, 12(vi)].
Technological Advancement: Yes – New insights enabling viable metadata SaaS [paras. 10, 12(iv)].
Documentation: Yes – Metrics/testimony sufficient [paras. 10, 13(i)].

Conclusion:

The court concluded that Project 1 met all SR&ED criteria under subsection 248(1) of the Income Tax Act, entitling Dazzm to a deduction under paragraph 37(1)(a) and an ITC under section 127 for the full $270,167 [paras. 1, 9].
Key rationale: project-level evaluation revealed systemic uncertainty from metadata architecture, beyond routine debugging [paras. 12(vi), 32].

Subproject 1 was integral, as its performance issues were emergent from the metadata design [para. 32].
This reinforces that combining known tools in novel contexts can qualify as SR&ED, provided systematic methods and documentation demonstrate advancement [paras. 10–12].

The project advanced metadata-driven SaaS technology, enabling 40% faster client onboarding through dynamic reconfiguration [paras. 21–23]. Partial resolution in 2018 (692 ms rendering); full via post-project updates [para. 35].
Subproject 1's insights (HOC/Redux limits) influenced React Hooks [para. 23].

Overall, the work created novel knowledge for large-scale, customizable enterprise platforms [para. 12(iv)].

Implications: Holistic assessment strengthens software integration claims, even with reconstructed records backed by credible evidence [para. 13(i)].

Documentation:

- Offline Documents: docs