

Information Technology Policy

Business Rules Engine

Number

ITP-INT006

Effective Date

April 16, 2009

Category

Integration

Supersedes

None

Contact

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Scheduled Review

December 2023

1. Purpose

This [Information Technology Policy \(ITP\)](#) provides enterprise-wide standards and guidance for Business Rules Engines (BRE).

2. Scope

This ITP applies to all offices, departments, boards, commissions, and councils under the Governor's jurisdiction (hereinafter referred to as "agencies"). Agencies not under the Governor's jurisdiction are strongly encouraged to follow this ITP.

Third-party vendors, licensors, contractors, or suppliers shall meet the policy requirements of this ITP that are applicable to the products and services provided to the Commonwealth.

3. Background

A BRE enables information technology (IT) and business staff to define rules using decision trees, decision tables, pseudo-natural language, programming-like code, low-code, no-code, or other representation techniques. Unlike traditional application development approaches, a BRE isolates the rule representation from the business processes, strategies, and tactics by providing for explicit rule management. This reduces the need for application programming changes to accommodate a business rule change.

A BRE provides features to analyze rules for rule conflicts, rule consistency, and other quality issues. A BRE allows for auditing of the rule execution path and firing order and provides rule repository and version control features to maintain and enhance the rule base.

In addition to the rule externalization capabilities (separating rules from programming code), a BRE can provide higher-level rule-processing capabilities, such as inference processing (forward chaining, goal-directed backward chaining), case-based reasoning,

and advanced heuristics. Business strategists, business analysts, and process owners can use diagnostic capabilities, rule execution audit trails, and heuristic analysis to mine past performance to inform future strategy selection.

4. Definitions

Business Rules Engine (BRE): A specific collection of design-time and runtime software that enables an enterprise to explicitly define, analyze, execute, audit, and maintain a wide variety of business logic, collectively referred to as “rules”. A BRE can be purchased independently or comes embedded in a business process management suite (BPMS). A BRE enables IT and business staff to define rules using decision trees, decision tables, pseudo natural language, programming-like code, or other representation techniques.

5. Objective

- Improve agility, which is defined as the ability of an organization to sense environmental change and to respond efficiently and effectively to that change.
- Reduce development and maintenance time with the separation of policy and rules for governance from application code. Eliminates the need for redundant application program changes through re-use of externalized rules and rule sets.
- Knowledge retention. Clarify the purpose of and dependencies among rules and policies through clearly expressed rules which are documented in a central repository.
- Encourage consistent practices.
- Ensure the interoperability and integration of existing enterprise product standards.
- Improve alignment and understanding between business and IT.
- Improve transparency.

6. Policy

New and existing applications and service-oriented integration projects that could benefit from a BRE shall use the current standards as defined in *STD-INT006A, Business Rules Engine Product Standard*.

Agencies shall use a Commonwealth standard BRE when any of the following are true:

- Decisions are complex and depend on other sets of logic or rules.
- A high decision transaction rate or a high volume of decisions is required.
- Policies and business decisions change often and require timely implementations.
- Transparency of decision logic is required for reporting, audit, or compliance.
- Policy and business decision development, sharing, and maintenance requires a closer, more collaborative environment for business and IT users.

Agencies shall establish rule organization, naming, and categorization standards, prior to or during product implementation.

Agencies shall define rules such that each rule or decision policy shall deal with one issue.

Agencies shall maintain only one rule repository to promote re-use and vocabulary standardization. Agencies shall use one of the current standard databases as prescribed in [ITP-INF001, Database Management Systems](#) for the repository.

Agencies shall define and implement a business rules governance process prior to product implementation. The process shall include procedures for access management, review, and approval, change management (versioning), and rule conflict mediation. Agencies shall leverage product workflow capabilities.

IT projects related to application integration shall be subject to review prior to inception for compliance with this standard through a review by Communities of Practice (CoP) or the established review processes where applicable, including, but not limited to, those outlined in:

- [BUS001, IT Planning and Projects](#)
- [BUS002, IT Investment Review Process](#)
- [SEC040, IT Service Organization Management and Cloud Requirements](#)

7. Responsibilities

7.1 Agencies shall:

- Adhere to the guidance and best practices provided in this ITP regarding when and how a BRE should be utilized.
- Ensure that any new BRE implementations are utilizing products listed as current standards in *STD-INT006A, Business Rules Engine Product Standard*.
- Define and implement a business rules governance process prior to the implementation of a BRE.

7.2 Office of Administration, Office for Information Technology (OA/OIT) shall:

- Maintain a list of BRE product standards.
- Review IT projects related to application integration in accordance with the established review processes.

7.3 Third-party vendors, licensors, contractors, or suppliers shall:

- Comply with the requirements of this ITP that are applicable to the products and services provided to the Commonwealth.

8. Related ITPs/Other References

- Definitions of associated terms of this policy are published on the Office of Administration's public portal: <http://www.oa.pa.gov/Policies/Pages/Glossary.aspx>
- Commonwealth policies, including Executive Orders, Management Directives, and IT Policies are published on the Office of Administration's public portal: <http://www.oa.pa.gov/Policies/Pages/default.aspx>
- [Management Directive 205.34 Amended Commonwealth of Pennsylvania Information Technology Acceptable Use Policy](#)
- [ITP-ACC001, Information Technology Digital Accessibility Policy](#)
- [BUS001, IT Planning and Projects](#)
- [BUS002, IT Investment Review Process](#)
- [SEC040, IT Service Organization Management and Cloud Requirements](#)
- *STD-INT006A, Business Rules Engine Product Standards*

9. Authority

[Executive Order 2016-06, Enterprise Information Technology Governance](#)

10. Publication Version Control

It is the [Authorized User](#)'s responsibility to ensure they have the latest version of this publication, which appears on <https://itcentral.pa.gov> for Commonwealth personnel and on the Office of Administration public portal:

<http://www.oa.pa.gov/Policies/Pages/default.aspx>. Questions regarding this publication shall be directed to RA-ITCentral@pa.gov.

11. Exemption from this Policy

In the event an agency chooses to seek an exemption from the guidance within this ITP, a request for a policy waiver shall be submitted via the enterprise IT policy waiver process. Refer to [ITP-BUS004, IT Policy Waiver Review Process](#) for guidance.

This chart contains a history of this publication's revisions. Redline documents detail the revisions and are available to CWOPA users only.

Version	Date	Purpose of Revision	Redline Link
Original	4/16/2009	Base Document	N/A
Revision	10/25/2010	ITP Refresh	N/A
Revision	07/19/2021	<ul style="list-style-type: none"> • ITP Refresh • Added to current ITP Template • Added third-party vendors to Scope and Responsibilities Sections • Added Definitions Section • Updated Policy, Related ITPs, and Exemption Sections 	N/A
Revision	12/12/2022	<ul style="list-style-type: none"> • ITP Refresh • Added a background section and relocated some information from purpose section to background section. • Updated responsibilities • Updated references • Updated standards in STD-INT006A 	Revised IT Policy Redline <12/12/2022>