GIT
Gestion de l’Information Technique

Knowledge Management Methodology at Hydro-Québec Production

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Agenda

- Hydro-Québec context
  - Project triggers
- Solution to access technical information
  - via concepts
  - via tasks
- Methodology to go from modeling to operation
Hydro-Québec

- **Mission**
  Generate, transmit and distribute electricity, mainly using hydroelectricity

- **One of the largest electric utilities in North America**
  - Its sole shareholder is the Québec government
Four divisions

Hydro-Québec Production

Hydro-Québec TransÉnergie

Hydro-Québec Distribution

Hydro-Québec Équipement et la SÉBJ

Hydro-Québec Production
Hydro-Québec Production
Specific Business Objectives

Objective 3: Further enhance the division’s performance

Preserve know-how and manage succession
  - Specialised know-how in a number of skilled jobs
  - Ex: Protection systems
Hydro-Québec Production Strategies to reduce expertise loss

Several initiatives:

- **Document the various know-how**
  - Critical knowledge mapping
- **Ensure knowledge access** using solutions such as:
  - Content & Information Management
  - Social workplace (Blogs, Forums, Wiki, Communities of practice)
  - Expertise networking ("bottin d'expertise")
  - Tools to capture know-how and provide employees with access to targeted technical information
GIT: A Technological Innovation project

In partnership with:
• LICEF (research team of TÉLUQ, a Quebec university)
• CDS firm (Categorical Design Solutions)
Architecture and technological infrastructure

Modeling, training, KM expertise services

Information systems aggregation

KM multi-platform and mobile applications

Business process management

Dashboard development
Athena Solution
Project Triggers

Current
- Disseminated Information
- Multiples Systems / Interfaces
- Information in people's head

Make decision based on appropriate information

Need

Proposed
Solution GIT
- Structured environment for centralised access to technical information
- Based on users' knowledge
What is GIT?
"Gestion de l’information technique"

1. User needs support to make the best decision

User

Knowledge Database

2. KDB contains information from a specific domain of expertise

Use case

3. The use case exploits a subset of the knowledge content
Access via...
- Concepts
- Tasks

Knowledge Database

Via tasks

Via concepts

Use case

User
Around Protection Systems

Parc de production / Generating Fleet

Document

Rapport de protection (Protective Technical Study)

Fiches de réglage / Settings Sheet

Appareillage / Turbine-Generator Unit

Centrale / Generating station

Maximo

Équipement / Protective relay

Logesdes

Hydro-Québec Production
Case 1: Provincial support

Access via concept

Hydro-Québec Production
Case 1: Provincial support Access via concept

Hydro-Québec Production

Maximo

Logesdes

Schéma d’exploitation
14444 - SCHÉMA PRINCIPAL DE L’INSTALLATION - SCHÉMA UNIFILAIRE D’EXPLOITATION

Numéro d’inventaire MAXIMO
14444

Numéro Logesdes

Schéma des services auxiliaires - Schema principal - Services auxiliaires C.A

Autre schéma

Renseignement de localisation
14444 - INFORMATIONS D’URGENCE ET LOCALISATION D’INSTALLATION CENTRALE DE LA CHUTE-ALLARD

Fermer  Modifier
Calculer les réglages en consultant le rapport de protection et les autres informations fournies ci-dessous. Utiliser les outils de calculs pour déterminer les seuils de mise au travail, déterminer les temporisations et vérifier les réglages.

Éléments à consulter

- Relais de protection
  - RELAIS DE DÉTECTION MALT ROTOR, 64F, A1

Rapport de protection

- 6562 - Rapport de protection

Schémas d’installation

- 5552 - SCHÉMA UNIFILARE MESURE ET PROTECTION

Autres schémas

Outils de calculs

No du relais traité

1

Nombre total de relais

6
GIT Methodology

From modeling... ... to operation
Ontology model for Concepts
Scenario Model for Tasks
Hydro-Québec Production

GIT Project

- Production Deployment / July 2012
  - Protection Systems Use cases

- Expected Benefits
  - Knowledge capture and Access
    - Multiple access perspectives
    - Flexibility to answer user requirements
  - Increased efficiency
  - Normalised process established
    - Facilitated new employee integration
Conclusions

- GIT provides the technical context for decision making - through the access strategies adopted
  - A result of knowledge capture in a specific domain of expertise

- Interfaces are the direct product of modeling
  - Providing flexibility to answer requirements