

# Well Log Archival and Retrieval using PPDM 3.7

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# Talk Outline

- Problem Description
- Solutions
- Outcomes - Successes and Issues
  - Technical Lessons
  - User Lessons
- Next Steps

# Goals of the Project

- Organize and assemble proprietary log data
  - Catalog current holdings
  - Align the well log data with the Master Well Identity Data Base
  - Make use of the data investments
  - Preservation of data and intellectual assets
- Improve access to data to allow for better management
- Improve data quality to promote wider usage
- Improve workflow efficiency by automating transfer of data from archive to applications
- Spatially enable log information

# Problem Statement

- Organizing International data collections
- Locate and process on a UNIX file system 27,000 digital log files among 235,000 files of various types
- Varying well and log identification detail
  - UWI
  - Well Name
  - API Number
- Identifying information may be found in the file or may be extracted from the directory path

# Solution

- Basic Components of the Solution
  - PPDM 3.7 Data Model
  - Oilware Application
  - PetrisWINDS Enterprise Application

# PPDM 3.7 Model Modules Used

- Well Module
- Well Log Module
- Information and Product Management Module (a.k.a. Records Management)
- Business Associate Module
- PPDM Meta Model (with complete integration of Units of Measure Model)
- Reference Tables (extensively utilized)

## Oilware, Inc

- EzTools - Well log conversion and database loading software
- TapeID\*Pro - Robust data file identification utility
- Extensive Curve and Parameter mnemonic management
- PPDM 3.7 Well Log Model expertise
- Database driven data validation
- Bulk Loading capability (process entire directory trees with a single script!)
- Raw Data Storage in original format with *on demand* conversion at time of retrieval by Petris WINDS

# Petris WINDS

- Architecture
  - Service oriented architecture
  - Extensible and Data
- User Interface for Searching
  - Simple, intuitive
- Catalog
  - Enhances search performance
  - Enhanced metadata management
- Adapters
  - Provides access to application and archive data stores
- Transfer
  - Transformation engine with patented\* integration approach
- PPDM 3.7 Well Log Model expertise
  - Active participation and support of the PPDM Well Log Data Model Working Group

# Project Activities

- At Startup
  - Bulk loading
  - Staging approach to logs with missing data
  - Reconciliation process on staged data
- Everyday workflow (Currently in introductory stages)
  - Using new loading capabilities
  - Adjusting basic workflows
    - Using better tools, correcting UWIs
    - Stabilizing mnemonics

# Major Technical Issues (1/2)

- Additions and Modifications to PPDM 3.7 Model
  - Added 2 Tables
  - Added 6 Columns to 3 different tables
  - Removed precision & scale from 24 numeric columns in 5 different tables.
- Reference data
  - PPDM has many referential integrity constraints and requires populating information in 40 R\_... Tables to correctly load the model
  - Integration with data from POSC PWLS data.
  - Over 211,000 Rows of Reference data in 76 different PPDM tables.

## Major Technical Issues (2/2)

- Units of Measure Implementation
  - Integration with PPDM meta model
  - Unit of Measure conversion philosophies
- Association of data file to correct well when loading

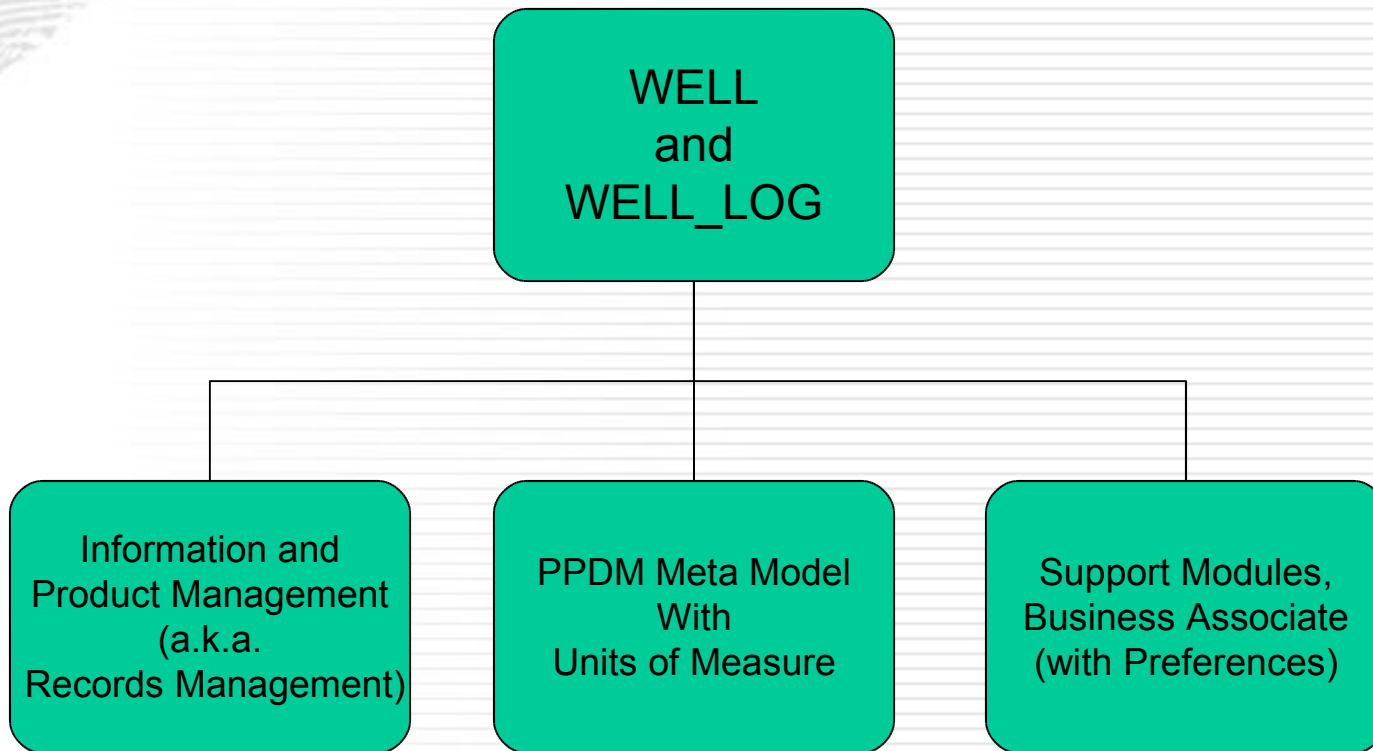
## Technical Lessons learned

- New model takes longer than you think
  - Reference data tasks!
  - Issues in using PPDM Units Model
- Need to handle imperfect / incomplete records
  - Missing well identifier data
- Reconciliation of data is a major endeavor
  - Missing well identifier data and logging comp.
  - Welcome to Mnemonic Hell!

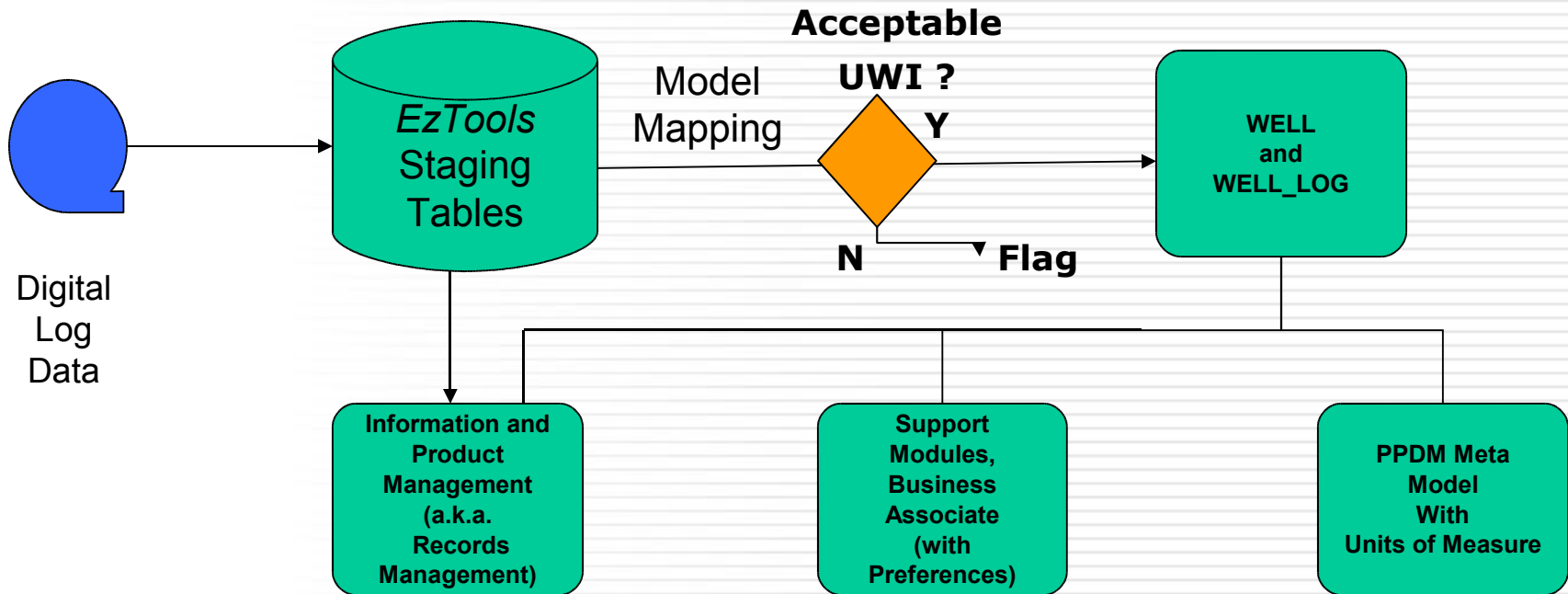
## Innovations

- Partial loading concept
- Facilitated by the PPDM model
  - Well log model is well isolated from the 'physical records' management model
  - Enables considerable processing to take place even without complete well identification

# PPDM Modules Used



# PPDM with Data Staging



## User Lessons

- What's working well
  - Oilware loading software
  - Petris WINDS interface
- What needs improvement
  - Workflow refinement
  - Defining content and practices for the archive
  - Modifications of WLMS to accommodate the above

## Next Steps

- Storing image logs
- Treating the staging database as a visible collection
- Add tools for reconciling the staging data base gaps and errors
- Talisman directions
  - Seamless data visualization
  - Improved work status presentation for techs
  - Access via Spatial Portal
  - Add adapters
  - Data on PC Shared Drives

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