



ILI Integrity Data Exchange and ECDA Integrity Data Exchange Standards

Ron Brush – New Century Software



“A major strength of an effective integrity management program lies in its ability to merge and utilize multiple data elements obtained from several sources...”

ASME B31.8S, Page 4.3

ILI Data Standard - The Goal

Develop a standardized data structure for the exchange of Inline Inspection Data between ILI Vendor and Pipeline Operator

The Team...

15+ Volunteers from:

- PODS Association
 - ILI Association
-
- October 2003 Kick-off Meeting
 - May 2004 Closure Meeting
 - Many Conference Calls

Team Members...

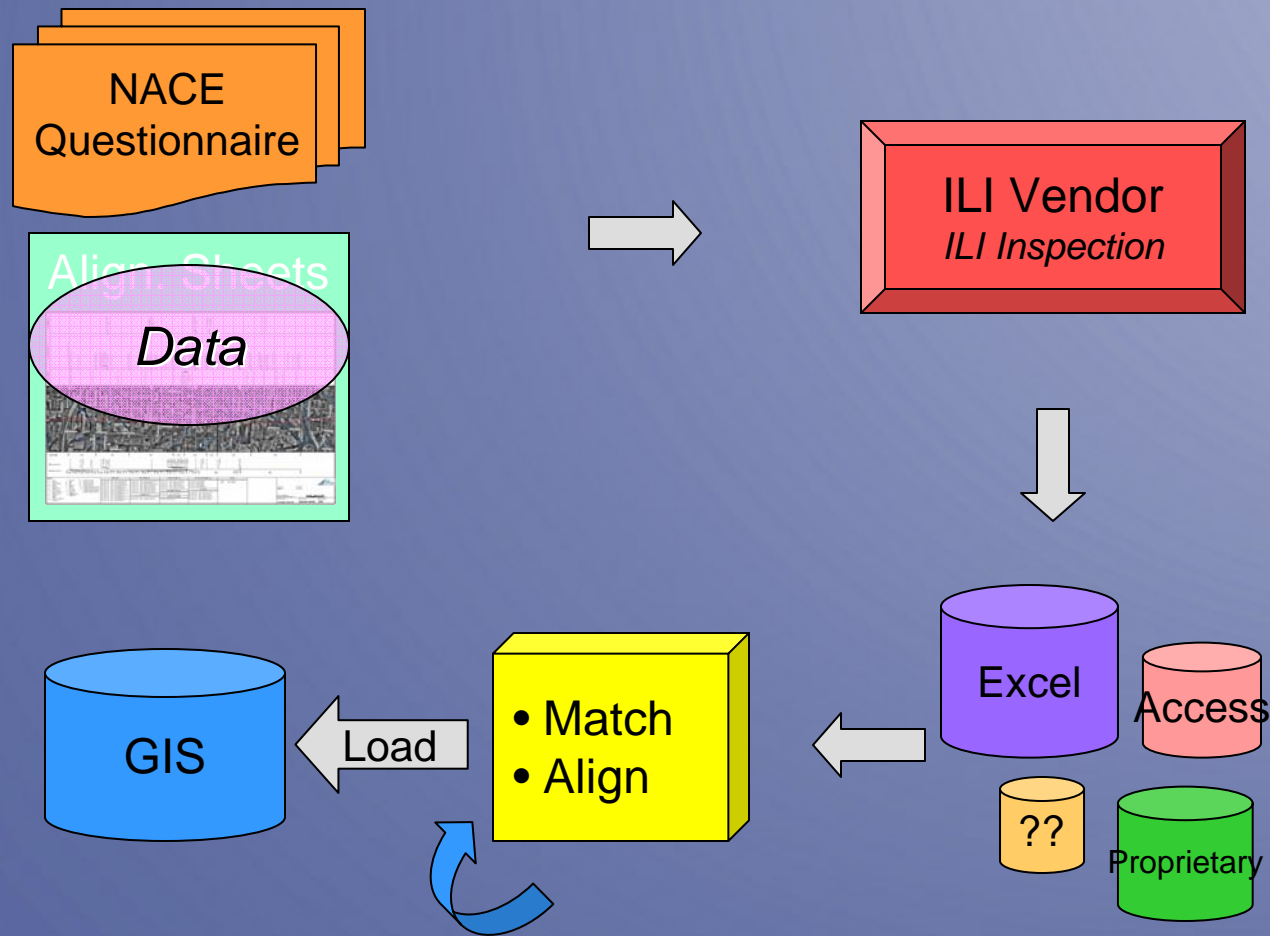
- Dominion Resources
- Duke Energy
- Enduro Pipeline Services*
- Hunter McDonnell
- Moore Resource Systems
- New Century Software
- Quorum Business Solutions
- Rosen Inspection*
- T.D. Williamson – Magpie*
- Tuboscope*

* ILI Vendors

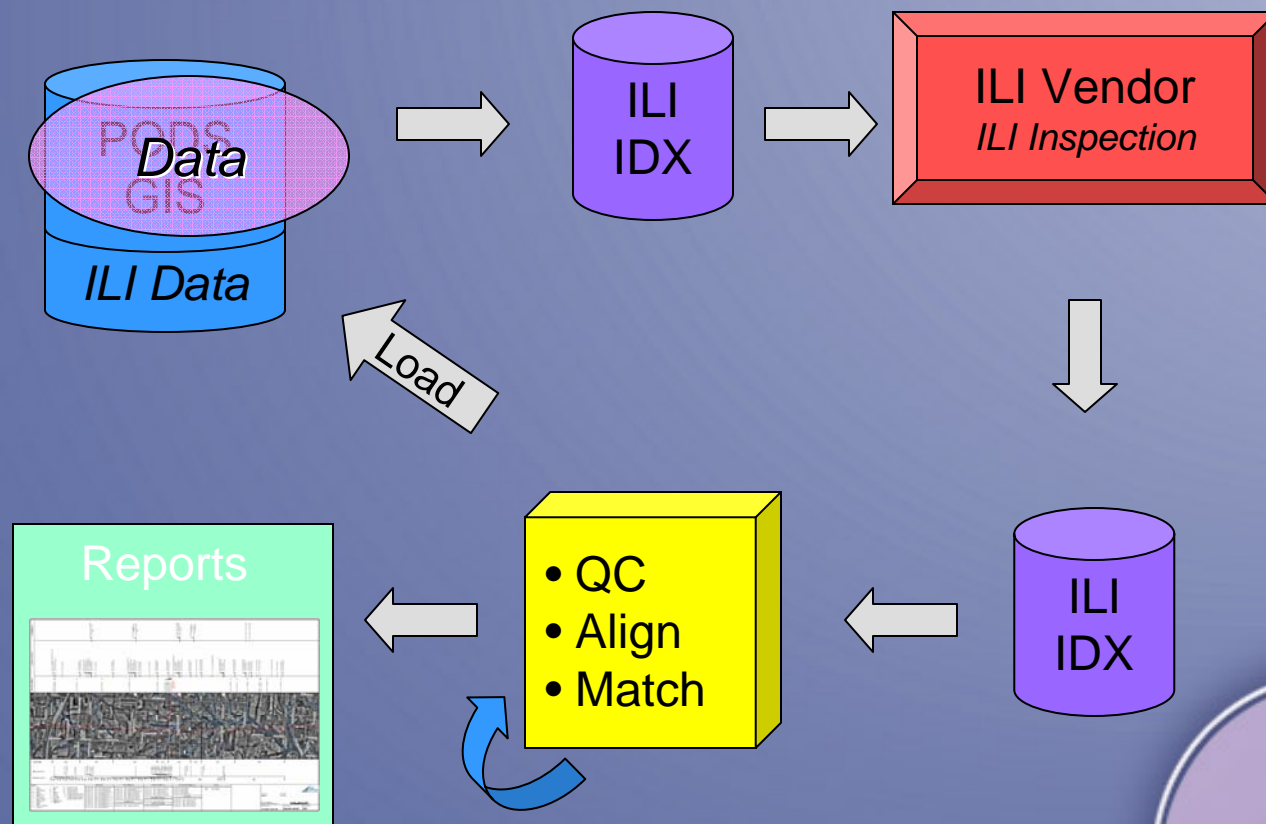
The Problem

- Inconsistent Data Formats
- Inconsistent Data Structures
- ILI Technology Differences
- Data Submission to ILI Vendor
- Data Alignment
- Data Integration

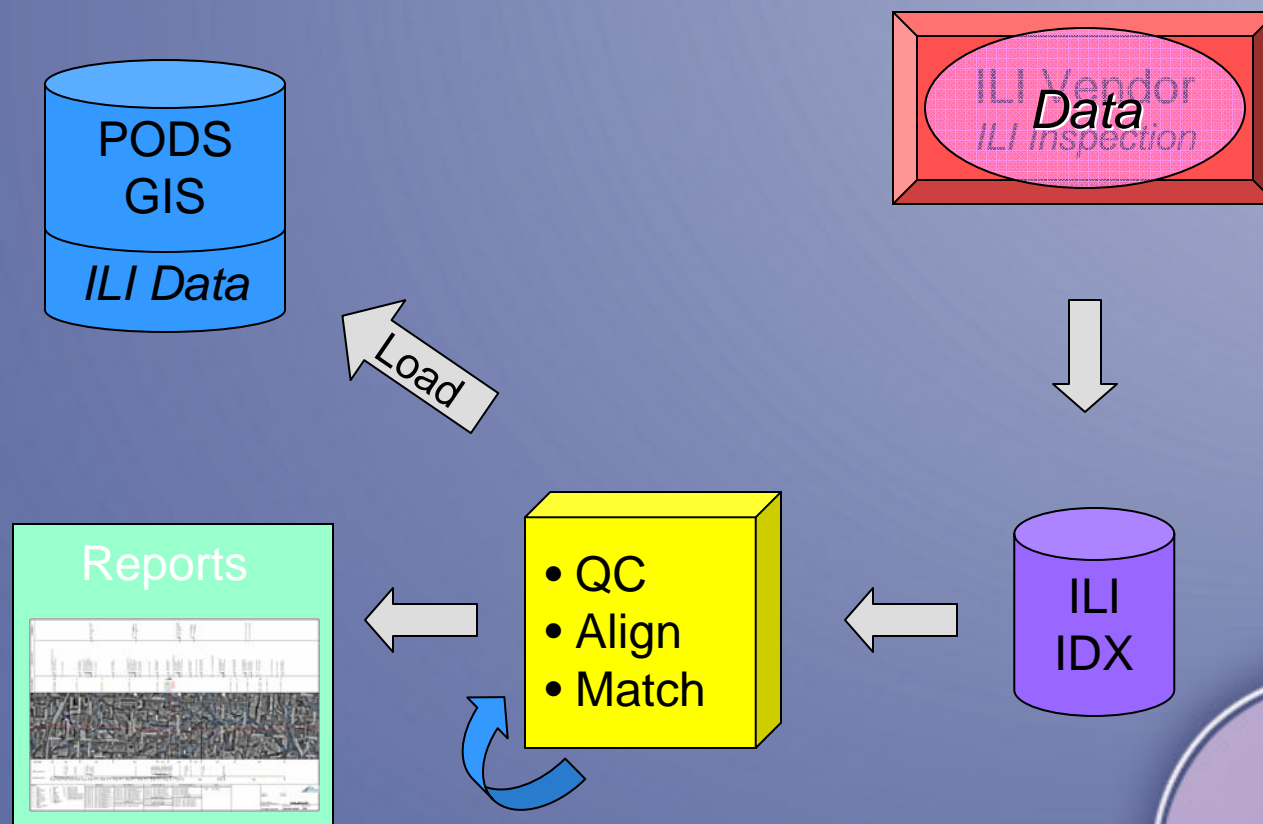
Current Workflow



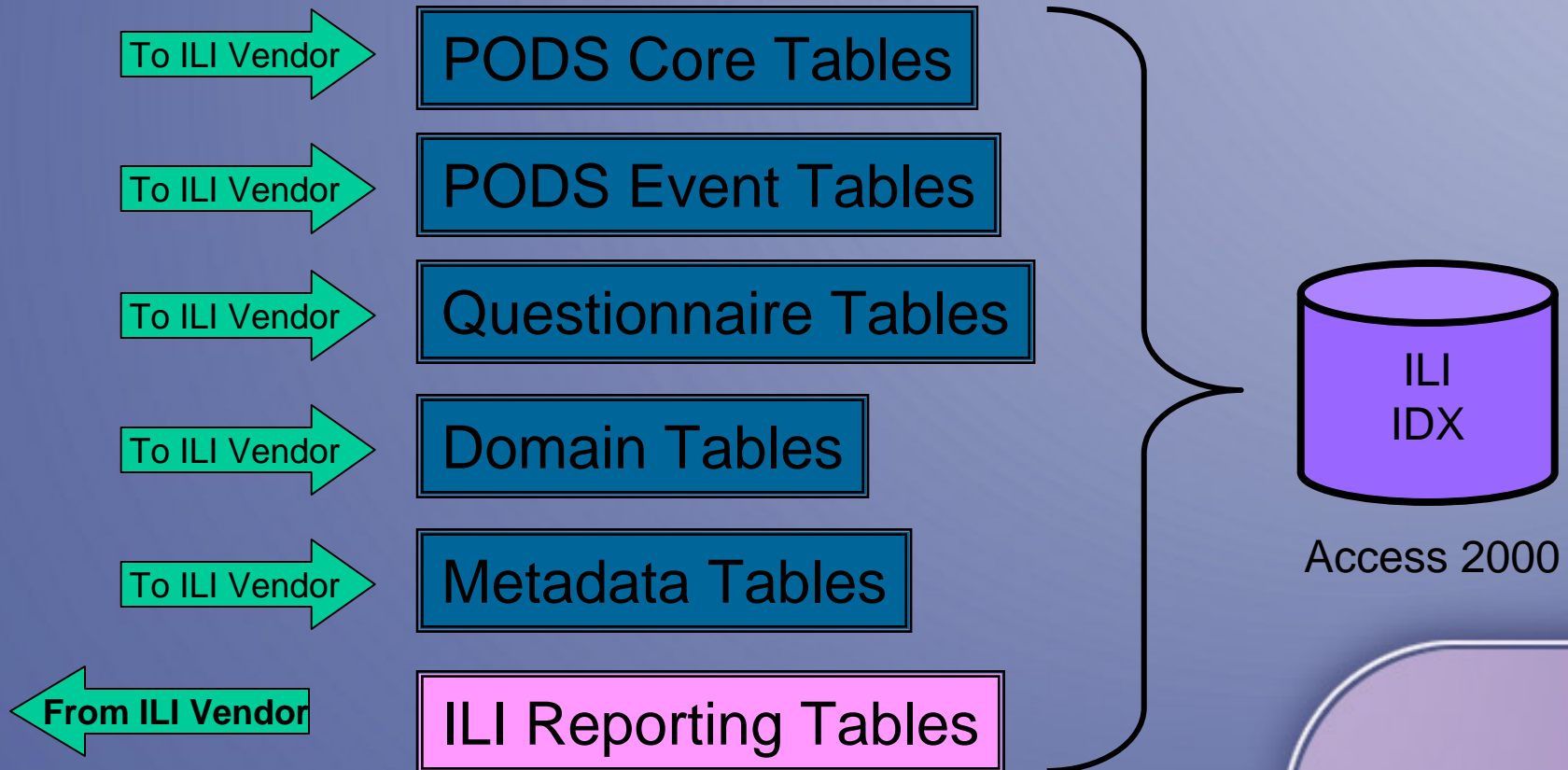
Proposed Workflow 1



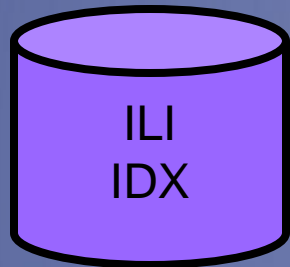
Proposed Workflow 2



Tables in the Model

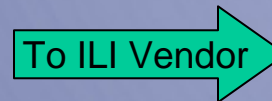


Tables in the Model



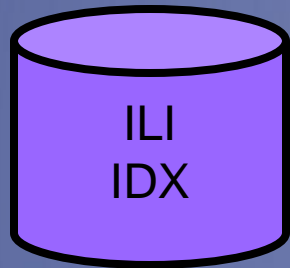
PODS Core Tables

- COORDINATE
- EVENT_RANGE
- FEATURE_TABLE
- LINE



- LOCATION
- ROUTE
- SERIES
- STATION_POINT

Tables in the Model



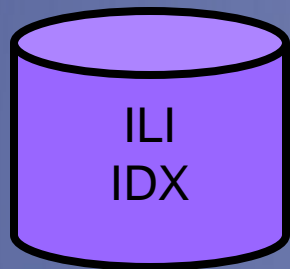
PODS Event Tables

To ILI Vendor



- AGM
- BRANCH_CONNECT
- CASING
- CLOSURE
- FOREIGN_LINE_CROSSING
- LAUNCHER_RECEIVER
- MARKER
- PIG_SIGNAL
- PIPE_JOIN
- PIPE_LENGTH
- PIPE_SEGMENT
- RAILROAD
- ROAD
- SLEEVE
- TAP
- TEE
- VALVE
- VENT_PIPE

Tables in the Model



Questionnaire Tables

- CONTACT
- PIPE_OPERATING_HISTORY
- TRAP_DETAIL

To ILI Vendor



(NACE RP-0102)

Domain Tables

- *_CL tables

To ILI Vendor



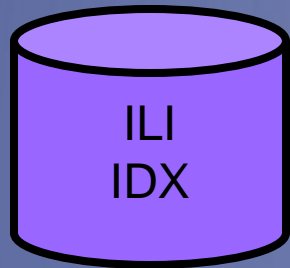
Metadata Tables

- METADATA

To ILI Vendor



Tables in the Model



ILI Reporting Tables

- ILI_CLUSTER
- ILI_DATA
- ILI_INSPECTION_RANGE



Description of the Standard

- Version 1.1 is on the PODS web site
- May contain one or more inspection runs
- Three Tables are populated by ILI vendor
- Only relevant data fields are populated
- Extendable – add tables and columns
(please don't delete)
- PODS data is read-only

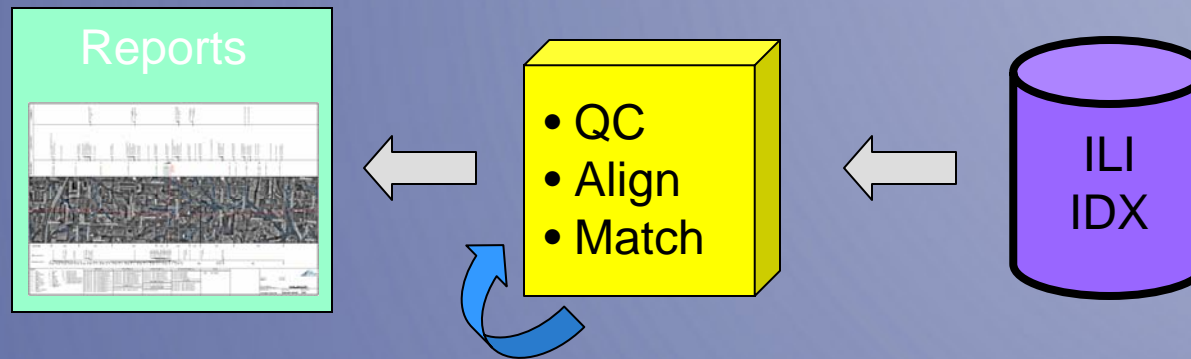
ALIAS

Anomaly Library for Inspection Assurance Standards

www.pipelinealias.com

- Common Notation for Anomaly Classification
- 10 Classifications of Anomalies
- 3-Tier System
 1. Classification
 2. Category
 3. Type

Workflow



Quality Control

- Make sure data is received correctly

Align

- Assign Stations to Odometer using Fit Points

Match

- Match ILI and Pipe Features

How to get it...

- PODS Web Site

<http://www.pods.org/downloads>

Let's take a quick look...

Benefits

- Faster, more consistent ILI data integration
- Compact package of data for ILI tool run(s)
- Standard data format – easier to integrate ILI data
- Recommended workflows
- Easier to build applications
- Clear, consistent data definitions



Proposed Joint NACE/PODS ECDA Integrity Data Exchange Standard

Part 2 of Presentation

ECDA Standard - The Goal

- Create a new ECDA standard jointly owned by NACE and PODS Organizations
- Similar to PODS ILI Data Interchange Standard developed in 2004
- Integrity Data Exchange (IDX)

Objective

The objective of the ECDA IDX Working Group is the development of a new ECDA data interchange database structure that will help standardize the integration and reporting of ECDA data within the pipeline industry. There currently are no standards for submission and management of ECDA data.

The PODS Association will seek joint development and publication of this standard with NACE International and the appropriate NACE technical committees.

Committee Membership

- Ron Brush (Chairman) – New Century Software
- Steve Biagiotti (Vice Chairman) – Structural Integrity Associates
- Drew Hevle – Enbridge
- Craig Champlin – Bass-Trigon
- Keith Cote – Moore Resource Systems
- Nancy Gleason – Dominion Resources
- Teresa Young – Geofields
- Kirk Cameron – New Century Software
- John Minnasian – Geofields
- Victor Magazine – Dominion Resources
- Wally Parker - CorrPro

Phases

- Phase I
 - Indirect Inspections
 - CP Survey
 - Coating Evaluation Survey
 - Corrosiveness of Environment Survey
 - Other
- Phase II
 - Storage of Direct Examination Measurements
 - Storage of Post-Assessment Data

Guidelines

- Seek participation of PODS and NACE members and non-members
- Seek participation of pipeline operators, ECDA vendors, software service providers, consultants and related parties
- Seek contributions from participants, utilizing existing mature data structures where practical and applicable
- Vendor-neutral design

Guidelines (cont.)

- Inclusive design – supporting multiple methods of representing data, as necessary
- Extensible design – providing users the ability to extend (add to) as necessary
- Maintain consistency with API ILI terminology
- Extend ILI IDX database for ECDA
- Field trial of new standards

Deliverables

1. Committee Report for NACE/PODS Publication
2. ECDA Integrity Data Exchange (IDX) Database (Access format)
3. ECDA IDX – XML Format
4. Database DDL – Data Definition Language
5. Data Dictionary
6. Sample ECDA IDX Database
7. User and Technical Documentation

Schedule

- May 25, 2005 – Kick-off meeting at NACE
- July 15 – completion of member submission
- Sept. 1 – draft version 1.0 for committee review
- Nov. 1 – submit to PODS TC for review
- March '06 – final draft for discussion at NACE Corrosion/2006
- Will not be included in PODS 4.0

Data Model Overview

Header Table – information about each run

- CIS Data Table – each reading in the run
- DCVG/ACVG Data Table
- AC Attenuation Table
- Pearson Survey
- Centerline Survey
- Environment Survey

ECDA IDX Preview

Let's take a look at it...

The Future of the Standards

- Inclusion into set of PODS Standards
- Continued Improvement
- Operator Adoption and Specification for Vendors
- Development of other Data Exchange Standards

Questions ~ Discussion

