



2008 Solar Annual Review Meeting

Automated Data Acquisition and Processing

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PDIL Concept

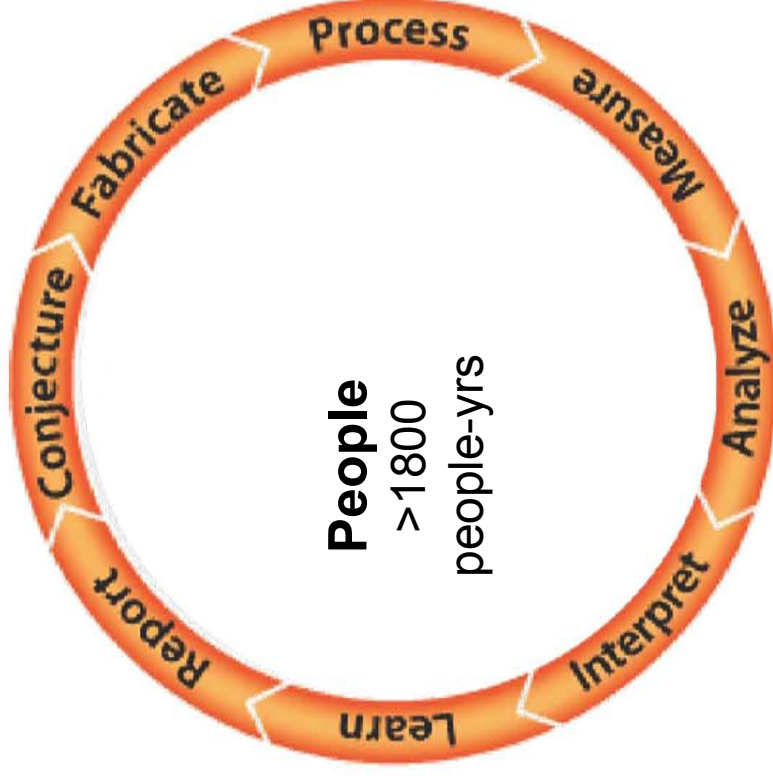


Data

recipes
instrumentation
results
data mining
modeling
...

Materials

TCO's
Metals
Semiconductors
...



Equipment

deposition
processing
measurement
...

The PDIL = Collaborative Facility

- work closely with NREL scientists
- integrated equipment
- answer pressing PV related questions

Automated Data Acquisition and Processing

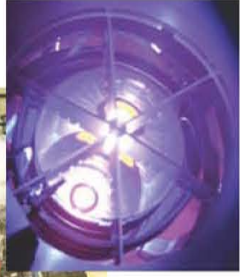
Operators



Investigators



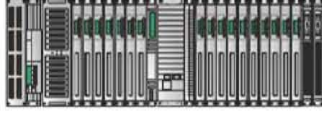
Tool 1



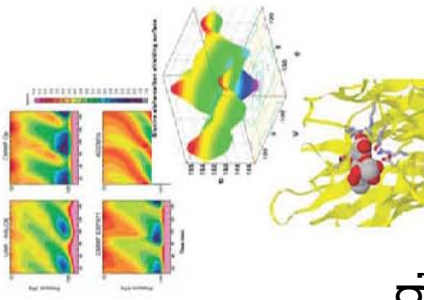
Tool *n*



**PDIL
Central
Server**



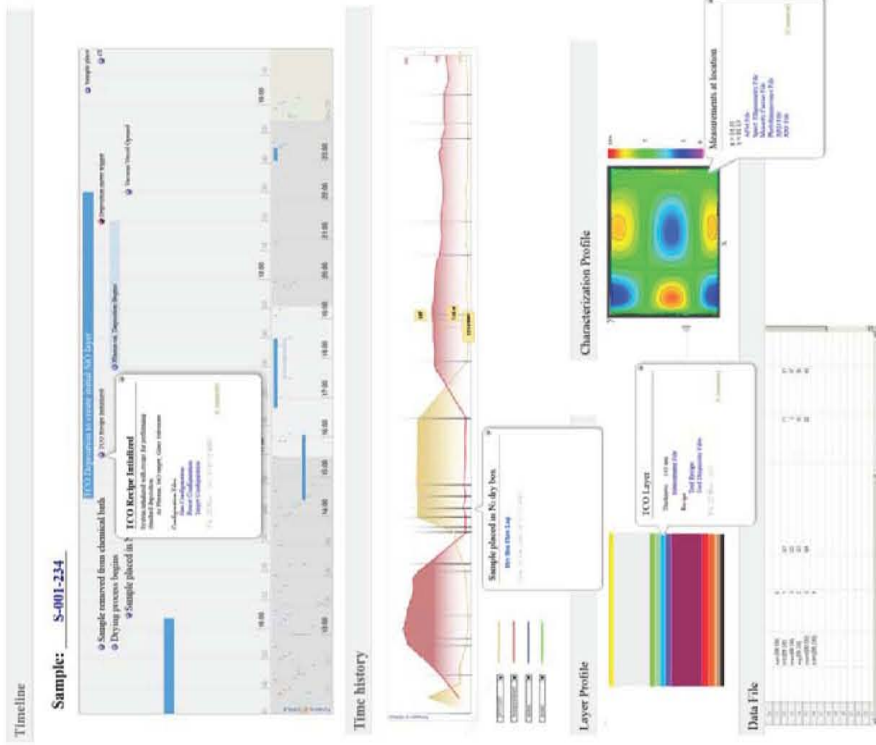
**SCC
Cluster**



Data Mining,
Modeling, and Simulations

Data Access

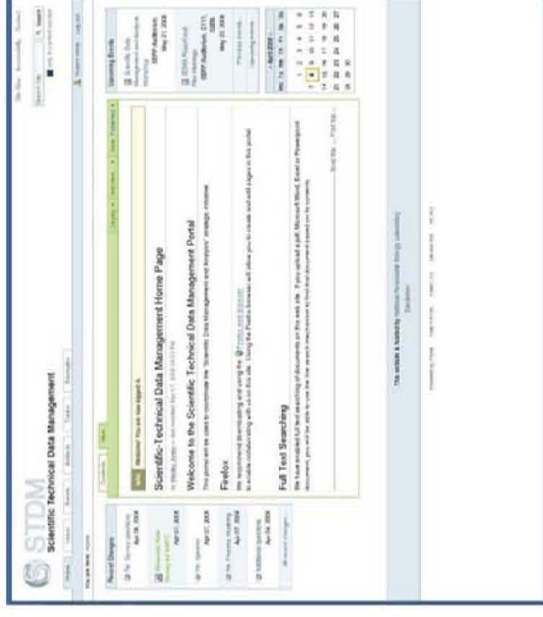
PDIL Data Explorer (Web)



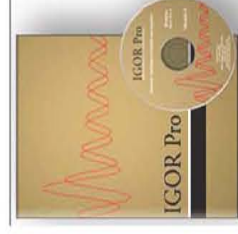
Proprietary Code (APIs)



SCC Data Mining (Web)



Direct Access to External Software (ODBC, File extraction, etc.)



Data Security

NREL Network

PDIL LAN

Tool

PDIL Firewall

DB & Archive

NREL Firewall

Data

System Passwords
and Permissions

Transport Layer
Security (SSL)

PGP Key authentication

Secure Transfer Methods
(SSH)

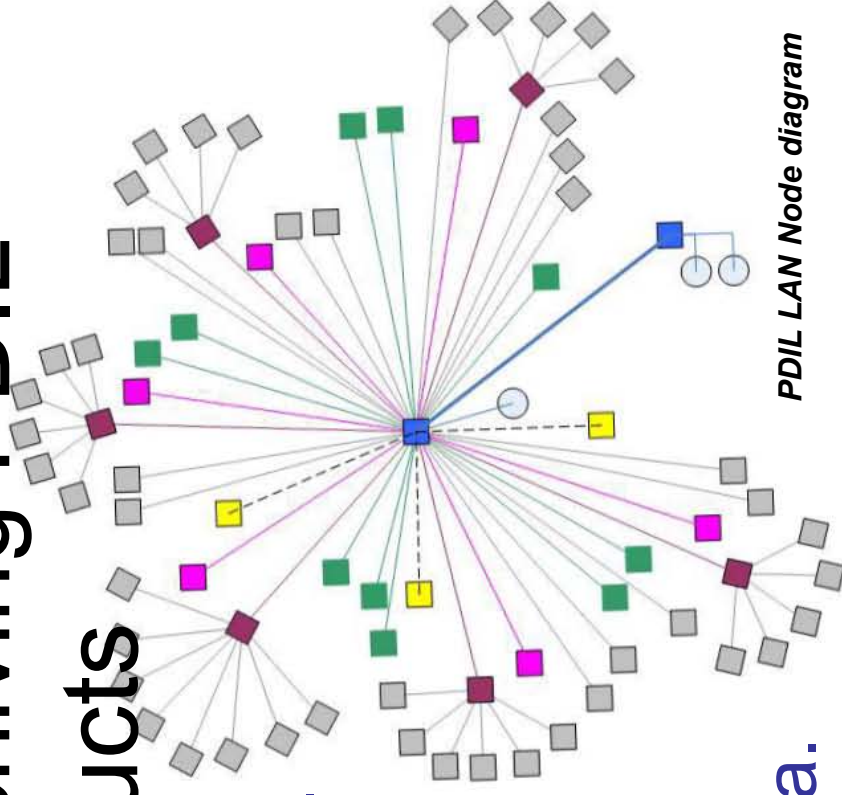
Web Site
Authorization

Data Encryption

Database
authorization
encryption

Integrating and Archiving PDIL Data Products

- Fully scalable architecture.
- Utilize existing infrastructures.
- Adaptable to all OS and tool systems.
- Unobtrusive acquisition and archiving.
- Protect and secure data.
- Provide ease of access to data.
- Provide relational data products to facilitate data mining.



PDIL LAN Node diagram