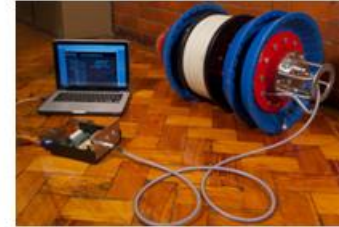


# Pipeline Non destructive Examination Toolbox of Integrity Solutions

## Inside the Pipe



Evaluating & Expanding Existing Technology

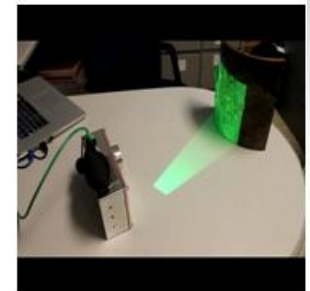
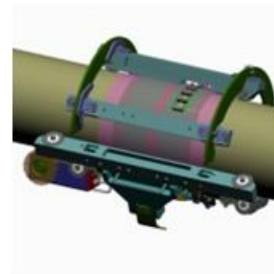
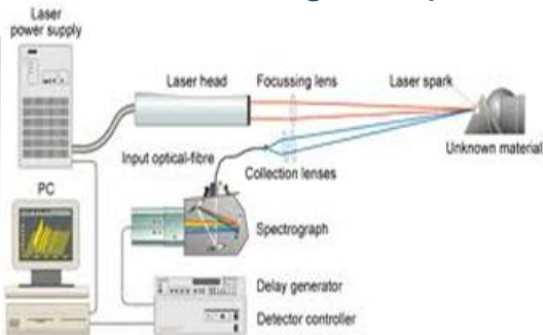
Developing New Technology



Evaluating & Expanding Existing Technology



Developing New Technology



## Outside the Pipe

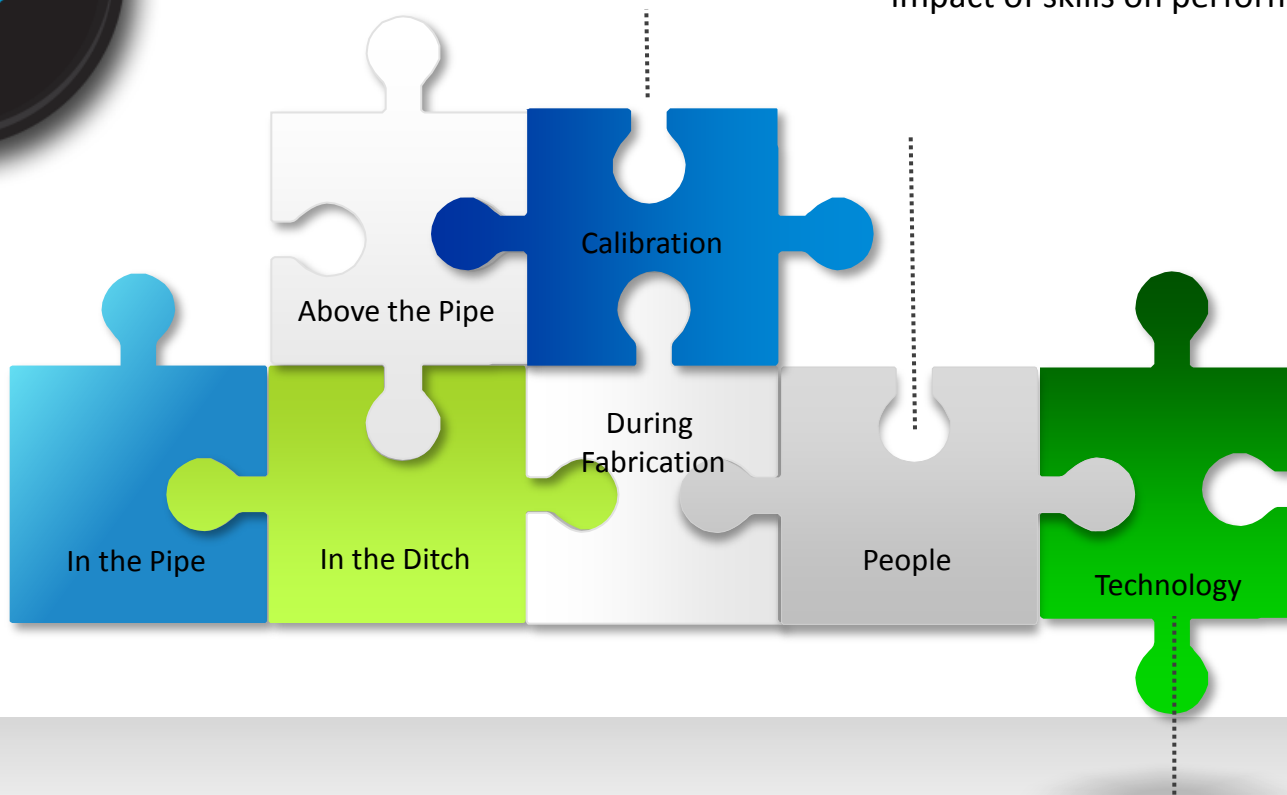


## Accurate Calibration

Are current calibrations robust enough, do they match new technologies, do we need new calibration standards

## People

Do we have the correct skill sets, do we know if people are competent, are we training enough, do we understand the impact of skills on performance



## The Key Components of Pipeline Non Destructive Evaluation

### Technology

Are we extracting the most from existing technology, are people deploying technology fast enough, are new technologies needed.

# Pipeline Non Destructive Examination

## Where Are the gaps – What R&D is Required?

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### Inside the Pipe

- Is In Line Inspection as good as it gets?
- What flaws or flaw interactions do we need to detect and size?
- Are we analyzing data accurately and fast enough?
- Are we extracting the most from ILI data?
- Do we need new and improved ILI solutions?



- Are there better ways to assess integrity outside the pipe?
- Is the use of data in an integrated form with improved analysis needed?
- What will pipeline surveillance look like in the future?
- Are there things in other industries we can apply or learn from?
- Do we need a new view of how to manage integrity?

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### Outside the Pipe