

Pipeline Research & Development Forum Prevention Track Summary

Identified Challenges	R&D Opportunities	Consensus	Why Worth Pursuing
<p>1. Effective 2 way communication industry-govt/public</p> <p>1. Cost effective depth of cover measurement/GPS/coating quality (\$ 9k?)</p> <p>1. Understanding avail DA tools & what they give.</p>	<ul style="list-style-type: none"> • Utility versus R&D function • Need good info to utilities from R&D community e.g API 1123 best practise • Downsize existing tools Devt costs \$ 0.5MM ?? Promote consortia for more tool developments. R&D need to carry things further Need all players in. Market pull. • Are DA tools proven ? If not need them proven 	<p>1. Yes</p> <p>2. No</p> <p>3. Yes/No</p>	<p>1. Good work is done (inc R&D) but not communicated-trust</p> <p>2. Cheaper tools would be used more widely.</p> <p>3. Multi-utility use to drive price down ?</p> <p>4. Is a prime method of complying with rule</p>

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<ol style="list-style-type: none"> 1. Coordinate encroachment efforts to produce an integrated system 2. Discrimination benign versus threats <ol style="list-style-type: none"> 1. Improve use of satellites for encroachment detection 2. Pipeline security ? <ol style="list-style-type: none"> 3. Cheaper Satellite comms for ROW data-eg CP. Coverage issues for cell phones 	<ul style="list-style-type: none"> • Identify & understand overlaps. Deliberate process <ul style="list-style-type: none"> • Optimize link to integrity & other projects. Monitor & adopt from other sources as appropriate • Industry collaboration ? 	<ol style="list-style-type: none"> 1. Yes for problem <ol style="list-style-type: none"> 2. Yes 	<ol style="list-style-type: none"> 1. Encroachment offerings fragmented - no co-operation ? 2. Industry group approach satellite vendors ? 3. Labor savings no need to send people.

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<ol style="list-style-type: none"> 1. Avoid duplication of effort & resources 2. Need for decision making tools - corrosion growth 3. R&D/documentation on coating failure 4. Best practices compendium current and emerging technologies to prevent mechanical damage 	<ul style="list-style-type: none"> • Vet & approve R&D matrix; consensus of R&D funding orgs • • Document what we know about older coatings & failure data • General problem communicating R&D efforts to market/field. Need process with sign-offs to transfer from R&D onwards Need partnerships. 	<ul style="list-style-type: none"> • Yes 	<ol style="list-style-type: none"> 1. We can not afford it - loss of FERC funding 2. Don't know what fails & doesn't 3. No benefit unless effectively transferred to field

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<ol style="list-style-type: none"> 1. Better mapping of Geospatial environment (<10ft) 1. Loss of FERC funds <ul style="list-style-type: none"> • Effective methods for monitoring offshore pipelines 	<ul style="list-style-type: none"> • Government role - continue to improve accuracy of all feature mapping • Need to be more disciplined in setting priorities • Preventing shipping too close. - dragging anchors 	<ol style="list-style-type: none"> 1. 	<ol style="list-style-type: none"> 1. Helps to avoid unknowing hits. Savings in time for all 2. PRCI looking at other sources- vendors, internatl 3. How is problem being dealt with - need to understand. 4. We need to replace the lost funding - how?

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1. C2	1. R1 2. R2	1. Yes / No 2. Yes / No	1. W2