

# *Network Innovation Competition Full Submission*

## *Supplementary Answer Form*

Tick if this answer is Confidential:

Tick if this answer has been provided verbally:

Project code:	SGN_GN_01	Question Number	3
Question date	27 <sup>th</sup> August 2013	Answer date	29 <sup>th</sup> August 2013
Submission section question relates to	Section 2 (page 7)		
Topic	Project Description		
Question	Re: Expected outcomes of the trials - 2, Please clarify precisely what is meant by 'joint integrity' and how this will be determined by robotic examination. Also, please provide details of the 'other information' that will be obtained and for what purpose.		
Notes on question			
Answer	<p><i>Element 3 – Robotic visual and non-visual inspection</i></p> <p><i>Expected outcomes of the trials are as follows:</i></p> <p><i>2. Live data collection on pipe wall thickness, stress cracks, joint integrity, and other Information</i></p> <p>Joint Integrity – The capability to evaluate the level and quality of the jute in cast iron joints is not currently possible and would provide insight for distribution networks to select the most effective method for sealing or rehabilitating each joint in a given block or area. Additionally, this information would also provide a means to better select the appropriate viscosity of sealant used for external or internal injected sealing methods.</p> <p>A variety of sensors will be researched and tested to determine if the integrity of the lead and jute seals on Cast Iron joints can be determined remotely from within the pipe.</p> <p>Additionally, sensors will be evaluated for their ability to determine the quantity and compactness of jute remaining in cast iron joints.</p>		

	<p>Other information" collected by sensors could include:</p> <ul style="list-style-type: none"><li>• Identification and measurement of corrosion levels using visual and non-visual sensing devices</li><li>• Measurement of key in pipe features using video measurement software</li><li>• Measurements of the circumferential and axial extent of damage along the pipe wall using laser measurement. Combined with wall thickness measurements this information could be used to generate a 3D "map" of the pipe's inner surface.</li><li>• Determination of low points in pipe using onboard accelerometers</li></ul>
Attachments	
Verbal Clarifications (Consultants )	