

Network Innovation Competition Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	SPTEN01/V0	Question Number	4
Question date	15 August 2013	Answer date	19 August 2013
Submission section question relates to	Section 2.5		
Topic	Technical Description of project		
Question	SP states that "SSO has been dealt with so far by local observation" with SSO devices. Can SP explain this in greater detail?		
Notes on question	N/A		
Answer	<p>There are devices commercially available for Sub-Synchronous Oscillation (SSO) detection and relay triggering, for example, the ERLphase SPRO relay http://www.erlphase.com/products.php?ID=S-PRO%20Relay%20Model%204000</p> <p>Such devices are designed to measure waveforms, perform sub-harmonic analysis, and use the results locally to trigger a protective action, such as generation tripping. This approach uses local measurements for a local response.</p> <p>The availability and use of these devices shows that the measurement and SSO analysis processes are feasible, and this aspect of the technology is proven.</p> <p>However, very limited data is available centrally to the TO/TSO, typically only the occurrence of a trigger and an associated disturbance recording. Thus, only localised information of the end result of severe cases is available.</p> <p>A need has been identified for long-term performance, early warning signs and geographical distribution of SSO effects. Since the SSO problem is inherently due to dynamic interaction between different components of the power system, the VISOR project will deliver a co-ordinated wide-area view of the issue that will provide a baseline of normal system behaviour and early indication of interactions that, if not addressed, may lead to plant</p>		

	tripping or damaging SSO problems. without introducing risk.
Attachments	N/A
Verbal Clarifications (Consultants)	