*Innovation Competitions - Full Submission*

*Supplementary Answer Form*

Tick if this answer has been provided verbally:

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| Project code | ENWT206 | Question Number | Q17 |
| Question date | 31 July 2014 | Answer date | 4 August 2014 |
| Submission section question relates to | Appendix B1 Technical Solution | | |
| Topic | Adaptive Protection Methods | | |
| Question | Appendix B1 – FL Mitigation Technologies, Pgs 61 & 62  Adpative Protection Methods  Is there a comparison between adaptive protection and IEC61850/GOOSE, and if so what are the benefits of the methods trialled in FLARE? | | |
| Notes on question |  | | |
| Answer | IEC 61850 is a communications protocol and GOOSE messaging is a part of this protocol which allows direct messaging between protection relays and/ or other IEC 61850 compliant devices. Therefore IEC 61850 / GOOSE is one way of implementing Adaptive Protection. To implement this method of Adaptive Protection we would need to replace all the protection relays with the modern numerical relays to allow them to send and receive messages to facilitate setting changes.  In FLARE we have proposed using the time element of a standard protection curve to change the order in which the protection relays operate. This is the most basic implementation of Adaptive Protection and is the most cost effective as it will only require the change of two protection relays at most (ie the two transformer protection relays). | | |
| Attachments |  | | |