

Phasor Comparator Algorithm for Electrical Power Swing Blocking

TECHNOLOGY DESCRIPTION

This technology is the improved current power swing blocking (PSB) to make the quadrilateral distance relay element in the PSCAD/EMTDC operates more efficiently.

TECHNOLOGY FEATURES

The PSB band is attached back-to-back to the characteristic of the distance relay. It is an improved version of the original PSB by introducing a novel Phasor Comparator algorithm for the PSB scheme using Fortran programming language. By applying Phasor Comparator algorithm, power swing events can be differentiated from line faults and the distance protective relay can be correspondingly blocked from wrongly operating and unnecessarily tripping the circuit breaker.

ADVANTAGES

- Improvement in power swing detection over the original algorithm inherent in PSCAD/EMTDC.
- Reliable modelling and simulation of PSB by Protection Engineers.
- Detailed Fortran source code is available for operation of new PSB.

INDUSTRY OVERVIEW

Prospect Industry: Electrical Power System Industries/Application Software Businesses

Compared to the originally available PSB unit in the commercial power system tool PSCAD/EMTDC, this product introduces a novel Phasor Comparator algorithm for the PSB scheme using Fortran programming language. PSCAD/EMTDC software has been used over its 30 years of existence by engineers and researchers around the world for modeling and simulations of electrical power system as well as by the business application software. Worldwide spending on enterprise application software will grow 7.5 percent to reach \$149.9 billion in 2015, increasing to more than \$201 billion in 2019. According to the latest forecast from Gartner, Inc. Analysts said that long-term growth in spending will be driven primarily by modernization, functional expansion and digital transformation projects. The market sub-segments showing the highest growth during the forecast period of 2014 through 2019 will be marketing, e-commerce and advanced analytics software. Markets and Markets forecasts the global Marketing Analytics Software Market to grow from \$1.20 billion in 2014 to \$2.10 billion by 2019. A minor limitation is that the Fortran source code for the Phasor Comparator algorithm must be run in conjunction with a suitable Fortran compiler while being incorporated in the PSCAD/EMTDC software. However, it is technically feasible to manufacture the product because it is an upgraded version of the originally available PSB in PSCAD/EMTDC. Potential market are enterprise application software and business related software. These enterprises can be contacted directly via personal selling or direct marketing. PSCAD/EMTDC software has a great potential market prospect and can be directly sold to international market when incorporated with PSCAD.

