## TECHNOLOGY DESCRIPTION

PEET is a software tool that supports engineers in the set-up and calculation of error budgets to estimate the impact of error sources on the total system performance and a figure of merit. It is suitable for performance budgets in all engineering domains – there is no restriction to pointing applications. PEET is designed as a toolbox for MATLAB and provides a dedicated graphical user interface to quickly create and modify the error signal flow via drag & drop. This allows an increased transparency on models and assumptions compared to purely tabular (spreadsheet) budgets.

INNOVATIVE ASPECTS

- 1-axis and 3-axis budgets based on standardised rules from ECCS (ECSS-ST-60-10C) and the methodology described in the ESA Pointing Error Engineering Handbook (ESSB-HB-E-003)
- Interface format to exchange, share and combine budgets
- Frequency domain approach for error signal transfer and sample-based approach for statistical error source properties allow fast evaluation compared to time-domain based Monte Carlo approach, thus the tool is well-suited for trade-off studies
- Programmatic determination of driving error sources and subsystems
- Accurate level-of-confidence evaluation based on probability density functions
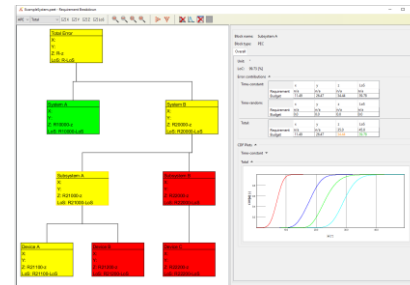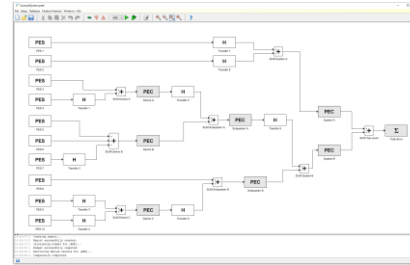
TECHNOLOGY READINESS (in space application)

TRL 9 (2024)

COUNTRY OF ORIGIN

Germany

LATEST UPDATE

06/2024

TECH CARD

TAGS	#pointing error	#matlab toolbox	#perform. budget	#error source	#engineering	#ecss

APPLICATION AREAS

Aviation	Construction & Civil Engineering	Data Processing, Software & AI	Food & Agriculture	Mechanical Engineering	Safety & Security	Space technologies