

Report Generation and Data Visualization

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Prairiefire
CONSULTING, INC.

Abstract

Prairiefire uses CETOL's report generation tools to extend data visualization capabilities and simplify results display.

We'll show one of our commonly used report templates that includes plotting and model tree navigation.

The tool will be available for download after our overview.

Author: Drew Coverdill

Presenter: Michael Lopez

Original work: Eric Gertner

Extending Report Generation

Capabilities

- Goal: reduce time writing reports
- Solution: implement features to save time and make Cetol-generated reports similar to our final report format.
 - Navigation
 - Reorganized bounds, mean, and other data
 - Relevant contributors (e.g. over 5%)
 - Contributor vs. sensitivity plot

MODEL SUMMARY

MEASUREMENT RESULTS

Configuration 1 Name

Measure 1 Name

Measure 2 Name

Measure 3 Name

Measure 4 Name

Measure 5 Name

Configuration 2 Name

Measure 6 Name

Construction tools

Check-Measure A

Check-Measure B

Check-Measure C

Check-Measure D

GENERAL INFO

Click-to-navigate
Table of Contents

Report Title

CAD: 000_ASSEMBLY
Analyst: Drew Coverdill - Prairiefire Consulting, Inc.
Client: Client Corp.

Title

Measurement results

Config: Configuration 1 Name

Measurement
header

MEASURE 1 NAME (CONFIGURATION 1 NAME)

Notes on the measurement from Cetol appear here.

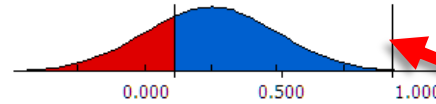
Notes

Bounds 1.000 0.000

Normal(0.17052; 0.30455)

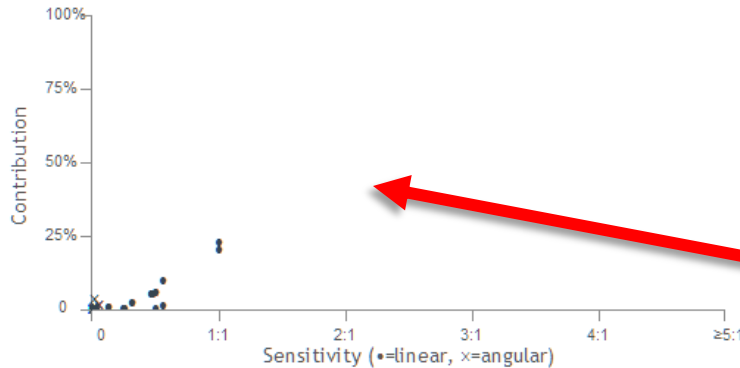
$\mu \pm 3\sigma$ 0.17 \pm 0.91

Yield 70.90%



Distribution
image

Results data



Sensitivity-
Contribution
Plot

Top Contributors List

VARIABLE	SENSITIVITY	CONTRIBUTION
LATCH;1 / Cam*;1 / Nose front / to A-B axis -C- side 1 -D- Slot midplane / TY ID: 43	-1 mm/mm	22.5%
LATCH;1 / TRIGGER;1 / # Nose clearance ribbon* / Size / Radius ID: 44	-1 mm/mm	20.1%

(Demonstration)

- (Outside of PowerPoint)

Implementation

- Uses xml to get the right content from CETOL, as a new report format.
- Uses css to provide navigation, custom formatting, etc.
- You can download this from our website:
www.pfcae.com

Future ideas

- xml generated distribution graphs
 - Higher/custom resolution.
 - Turn distributions on/off without re-running report generation
- Automatic drop-in images of measurement location
- Interactive customizable report format
 - turn individual elements on and off without editing code or re-running report generation

Discussions and Observations

Cetol Object Notation

*	notes attached
!	needs attention / is incomplete
+	float (default values)
++	float (non-default values)
-	float turned off (default values)
--	float turned off (non-default values)
~	approximate
#	construction feature
&	“more complementary info here”