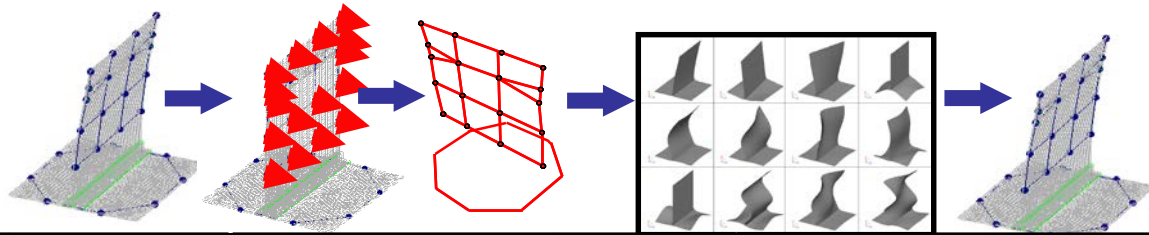
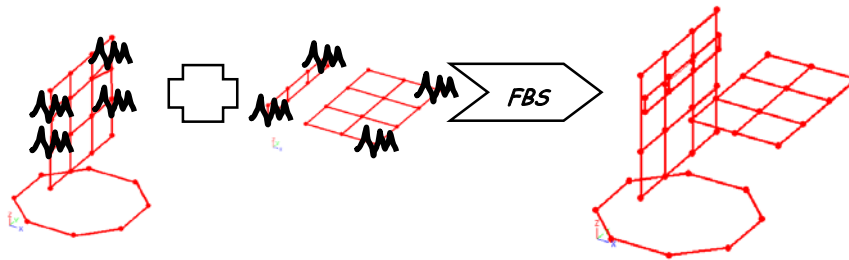


Improved FRF Measurements for Frequency Based Substructuring



Mode	Frequency of Ref. Model Mode Shapes (Hz)	Frequencies of FBS with VIKING Smoothed Test Data Modes (Hz)	% Error in Frequency	POC Comparing FBS with VIKING Smoothed Wing to Reference Model	% Error In POC
1	13.06	12.65	3.10	0.972	2.78
2	25.20	24.76	1.76	0.969	3.08
3	28.55	27.50	3.68	0.965	3.53
4	53.41	52.90	0.95	0.985	1.52
5	70.25	69.72	0.76	0.988	1.17
6	96.12	95.10	1.06	0.994	0.58
7	141.63	140.80	0.59	0.995	0.55
8	185.54	185.42	0.06	0.995	0.46
9	218.57	227.82	4.23	1.038	3.80
10	231.27	234.48	1.39	1.018	1.77
Average % Error:			1.76		1.92



Frequency based substructuring is a valuable tool for the development of system models from component information. However, many times the FRF measurements have contaminations that render the solution useless. Several new approaches for data smoothing and conditioning of the FRF measurements have been developed to overcome these problems. Both analytical simulations as well as actual test data have been used to identify the problems, condition the data and provide accurate frequency based system models.