COMPREHENSIVE SOLUTIONS FEATURES GRID

MATERIALS DATABASE		CL	DT	MP	EIE
OUTPUTS	Fatigue life	X	X		
	Critical plane normal, load history on critical plane	X	X		
	Crack open / close state history	X	X		
	Crack length history	X	X		
	Rainflow counting with time indices preserved for event identification	X	X		
	Critical plane life sphere	X	X		
	Cavitation / wrinkling detection	X	X		
	Safety factor	X			
	Haigh diagram	X			
	Cure / age equivalent exposure time		X	X	
	Residual life / residual strength		X		
	Stiffness evolution due to cycles and / or ageing		X		
	Volumetric heat rate			X	
	Oxidation rate			X	
	Ahagon diagram			X	
	Interpolated strain history				X
	Transform to reduced coordinates				X
	Boundary condition solution path for map precompute				X
MATERIAL MODELS	Hyperelastic laws: neo-Hookean, Arruda-Boyce, Mooney-Rivlin, reduced polynomial, Van der Waals, Ogden, hyperfoam, Marlow	X	X		
	Mullins effect	X	X		
	Crack growth rate laws: Thomas, Lake-Lindley, table lookup	X	X		
	Crystallization laws: Paris (no chrystallization), Mars-Fatemi, table lookup	X	X		
	Ozone attack, creep crack growth	X	X		
	Temperature dependent stress-strain and fatigue laws	X	X		
	Arrhenius model for curing and ageing (1 parameter ageing model)		X	X	
	Cyclic softening		X		
	Hysteresis / self-heating: powerlaw, Kraus, table lookup, WLF			X	
	Thermal runaway			X	
	Basic auto-oxidation scheme			X	
	Aerobic and anaerobic material property evolution (2 parameter ageing model)			X	
	Materials database	X	X	X	
PROCEDURES	Critical plane method	X	X		
	Infinite life / safety factor analysis	X			
	Safe life analysis	X			
	Damage tolerant analysis		X		
	Block cycle generation from road loads	X			X
	Rolling structures (ie tires) with axi- or cyclic- symmetry	X	X		
	Periodic results transfers for tires	X	X		
	Accelerated strain history generation / signal defeaturing	X			X
	Structural cosimulation		X		
	Block cycle schedules / multi-step protocols / sequence effects		X		
	Restart capability		X		
	Damage extrapolation		X		
	Thermal cosimulation			X	
	Diffusion cosimulation			X	
	Nonlinear precomputed FE results map, up to 6 channels				X
	Mapping methods: case vectors, spiral grid, user-defined				X
	Strain history interpolation				X
	Channel reduction				X
FE CODES	Abaqus	X	X	X	X
	Ansys	X	X	**	X
	Marc	X	X		X
	fe-safe/Rubber	*	X	X	X
LICENSING	Node-locked	X	X	X	X
	Network floating	X	X	X	X
	Annual lease	X	X	X	X
	Perpetual	X	X	X	X
	Maintenance and support	X	X	X	X
	Single zone, regional, global	CL	DT	MP	EIE
	multi-threading / parallel processing	X	X	X	X

*DT, MP and/or EIE add-ons include a CL license when purchased for fe-safe/rubber   ** Partial integration available

C-SUITE INSIGHTS

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