

AP209E2 Initial Module Breakdown
V1.1 August 31, 2005

Module **Application Object**

PRODUCT DATA MANAGEMENT

Product Identification

part_and_version_identification
part_definition_relationship
part_view_definition
product_categorization
product_concept_identification
product_identification
product_version
product_version_relationship
product_view_definition
product_view_definition_properties
product_view_definition_relationship

Work Management

approval
certification
contract

Activity

activity
activity_method
work_order
work_request

Document Management

document_and_version_identification document_assignment
document_definition document_management document_properties
document_structure
external_item_identification_assignment
file_identification

Management Resource Information

alias_identification
class
classification_assignment
date_time
date_time_assignment
event
event_assignment
external_class
external_model
group
identification_assignment
incomplete_data_reference_mechanism
management_resource_information multi_linguism
name_assignment
project
security_classification
time_interval
time_interval_assignment

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<u>Module</u>	<u>Application Object</u>
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Product Structure

assembly_structure
product_replacement
product_structure
single_part_representation

Configuration Effectivity

configuration_effectivity
configuration_item
effectivity
effectivity_application

Person Organisation

person_organization
person_organization_assignment

Properties

independent_property
independent_property_representation
process_property_assignment
property_assignment
shape_property_assignment

CONFIGURATION CONTROLLED 3D PARTS AND ASSEMBLIES

Geometric Shape

advanced_boundary_representation
basic_curve
basic_geometry
construction_geometry constructive_solid_geometry_3d contextual_shape_positioning
derived_shape_element edge_based_wireframe elemental_geometric_shape
faceted_boundary_representation
foundation_representation geometrically_bounded_surface
geometrically_bounded_wireframe
manifold_surface
shell_based_wireframe
topologically_bounded_surface

Associative Text

associative_text
text_appearance

Geometric Dimensioning and Tolerancing

default_tolerance dimension_tolerance
extended_measure_representation
geometric_tolerance measure_representation
value_with_unit

Geometric Accuracy and Validation

geometric_validation_property_representation
representation_with_uncertainty

Geometric Presentation

appearance_assignment
colour
curve_appearance
general_surface_appearance
layer_assignment
shape_appearance_layers
styled_curve

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COMPOSITE STRUCTURE DEFINITION, SPECIFICATION, AND SHAPE

Composite Structure Definition

Composite_constituent_definition

constituent_part
ply
ply_piece
ply_piece_shape
processed_core
ply_laminate
ply_laminate_shape
filament_laminate
filament_laminate_shape
woven_laminate
woven_laminate_shape
braided_laminate
braided_laminate_shape
composite_assembly
composite_assembly_shape

Laminate_table

laminate_table
surface_with_direction
SURFACE

Part_laminate_table

ply_laminate_table
ply_laminate_sequence_definition
composite_assembly_table
compiste_assembly_sequence_definition
component_class_for_assembly

Zone_laminate_table

zone_structural_makeup
smeared_material
percentage_laminate_table
percentage_ply
thickness_laminate_table
thickness_laminate_table_component
zone_structural_makeup_shape_representation
edge_zone_shape
boundary_class_zone
point_zone_shape

Composite Structure Shape

Ply_shape

ply_shape
projected_ply_shape
projection_method
DIRECTION
surface_ply_shape
LENGTH_MEASURE
view_ply_shape
laid_ply_shape
flat_pattern_ply_shape
LOCATION

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<u>Module</u>	<u>Application Object</u>
Ply_orientation	ply_orientation_angle reinforcement_orientation_basis draped_orientation_angle laid_orientation_angle woven_orentation_angles braided_orentation_angles angle_select point_path point_and_vector CURVE DIRECTION

Composite_constituent_shape	constituent_shape_representation beveled_sheet_representation ANGLE_MEASURE LENGTH_MEASURE composite_sheet_representation face_based_sheet_representation SURFACE LOOP geomtric_sheet_representation boundary_curve_representation CURVE three_d_geometry_set CURVE SURFACE
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Material

Material_specification (may exist)	material_specification
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Material_property (look at 210 module for this)	material_property environment
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Stock_material	stock_material anisotropic_material isotropic_material stock_core filament_assembly woven_assembly braided_assembly discontinuous_fiber_assembly
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Ply_material	ply_stock_material
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Design_material_aspects (E1 extended to apply material to shape aspects)	design_material design_material_application material_select
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ANALYSIS MODEL, CONTROL, AND RESULTS

Analysis Identification

Analysis	analysis analysis_version analysis_design_version_relationship analysis_discipline_product_definition
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<u>Module</u>	<u>Application Object</u>
Retention_period	retention_period retention_data_select
<u>Mesh Model</u>	
FEA_model	fea_model fea_model_definition
FEA_group (may exist and just need to extend)	group group_relationship
Node	node node_description substructure_node_relationship node_shape_relationship nodal_results_coordinate_system
Finite_element	element element_description element_shape_relationship element_shape_aspect volume_element surface_element curve_element substructure_element point_element directionally_explicit_element explicit_element
FEA_matrix	mass_matrix stiffness_matrix damping_matrix general_matrix
Element_properties	curve_property curve_section_properties curve_cross_section cross_section_shape_select surface_property surface_thickness element_property_geometric_relationship element_property_select definition_element
FEA_material_specification	fea_material_specification fea_material_definition fea_material_property

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<u>Module</u>	<u>Application Object</u>
CFD_model	mbna_model
CFD_zone	mbna_zone
CFD_grid_coordinates	grid_coordinates
CFD_defined_data	specified_general_property
CFD_equation	flow_equation_set
Model_product_domain	model_product_domain
Numerical_model	numerical_model
Structured_mesh	structured_mesh_model
Unstructured_mesh	unstructured_mesh_model
<u>Analysis Shape</u>	
Analysis_shape	analysis_shape idealized_analysis_shape node_shape
FEA_shape	point_model
Non_manifold_surface	non_manifold_shape_representation
<u>Fields and Properties</u>	
Model_property_distribution	model_property_distribution
Property_distribution_description	property_distribution_description
FE_analysis_definition_relationships	product_and_model_relationships action_and_model_relationships state_and_model_relationships shape_relationships property_distribution_and_model_relationships FEA_definition_relationships
CFD_specified_general_property	specified_general_property
<u>Analysis Control and Boundary Conditions</u>	
Analysis_control	analysis_control

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<u>Module</u>	<u>Application Object</u>
FE_analysis_control	fe_analysis fe_analysis_control_step static_control_step modes_and_frequencies_analysis_step
FE_analysis_state	fe_analysis_state output_request_state specified_state linearly_superimposed_state calculated_state
FE_analysis_state_definition	fe_analysis_state_definition singleoint_constraint_values nodal_freedom_definition element_field_variable_definition elemnt_nodal_freedom_actions linear_constraint_equation_values analysis_message definition_reference
FE_analysis_constraint_definition	constraint linear_constraint_equation nodal_degree_of_freedom_reduction
CFD_condition	mbna_condition
CFD_step	mbna_step
Model_action_domain	model_action_domain
Model_state_domain	model_state_domain
<u>Analysis</u>	
FE_analysis_results	fe_analysis_results fe_analysis_results_step static_results_step modes_and_frequencies_analysis_step
CFD_analysis_results	mbna_result
Analysis_report	analysis_report_representation graphical_representation tabular_representation
Simulation_run	simulation_run