AUTODESK® INVENTOR® 2022 API Object Model

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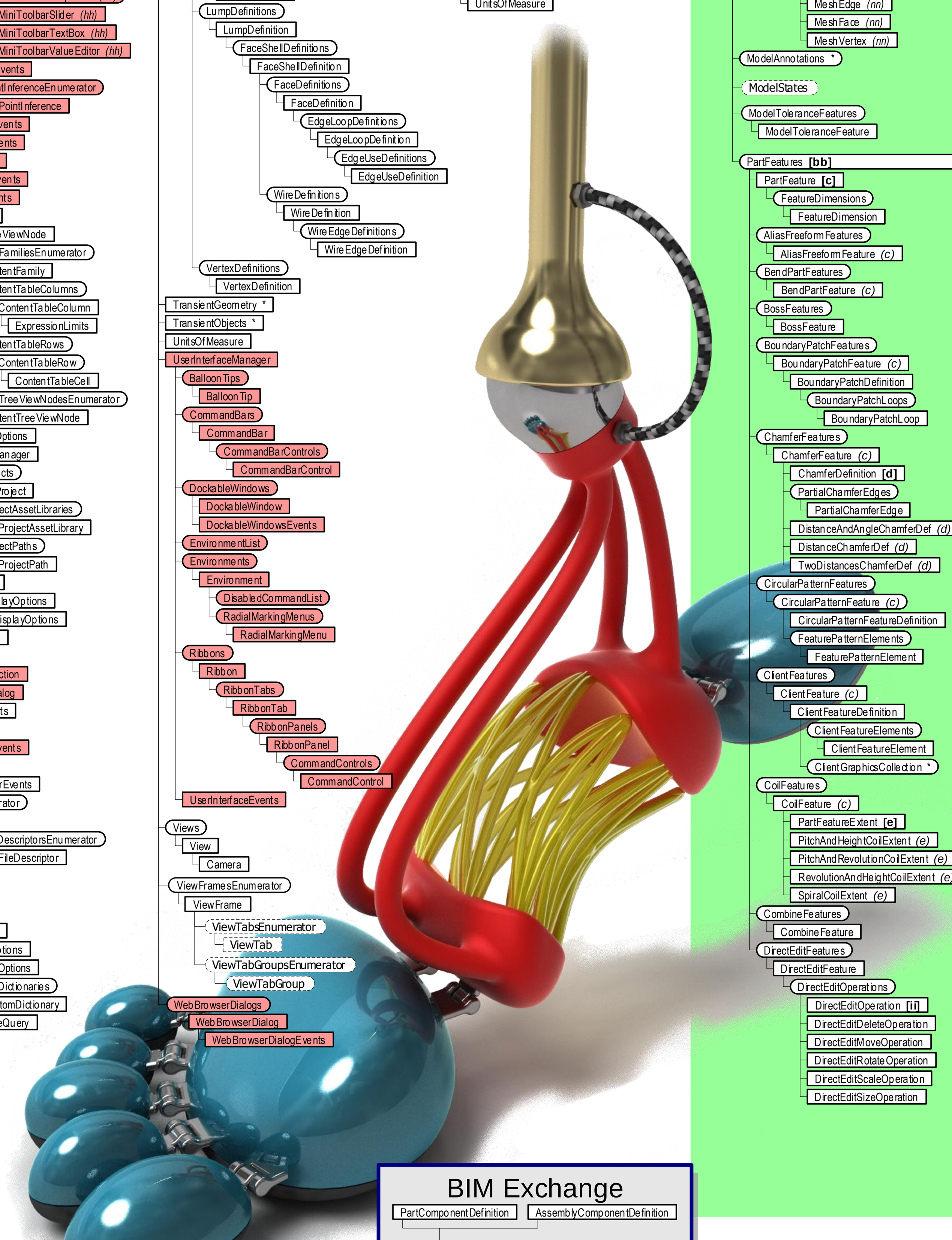
      - Balloon
        - BalloonValueSets
          - BalloonValueSet
        - Leader *
    - Border
    - Centerlines
      - Centerline
    - Centermarks
      - Centermark
    - CustomTables
      - CustomTable
        - Columns
          - Column
        - Rows
          - Row
            - Cell
        - TableFormat
    - DataIO
    - DrawingDimensions
      - DrawingDimension [ff]
        - DimensionText
      - BaselineDimensionSets
        - BaselineDimensionSet
      - GeneralDimensions
        - GeneralDimension (ff)[u]
          - DimensionText
        - AngularGeneralDimension (u)
        - DiameterGeneralDimension (u)
        - LinearGeneralDimension (u)
        - RadiusGeneralDimension (u)
      - OrdinateDimensions
        - OrdinateDimension (ff)
      - OrdinateDimensionSets
        - OrdinateDimensionSet
          - OrdinateDimensionsEnumerator
      - ChainDimensionSets
        - ChainDimensionSet
    - DrawingNotes
      - DrawingNote [aa]
      - BendNotes
        - BendNote (jj)
      - ChamferNotes
        - ChamferNote (jj)
      - GeneralNotes
        - GeneralNote (aa)
          - UnitAttributes
      - HoleThreadNotes
        - HoleThreadNote (jj)
      - LeaderNotes
        - LeaderNote (aa) [jj]
          - Leader *
          - UnitAttributes
      - PunchNotes
        - PunchNote (jj)
    - DrawingSketches
      - DrawingSketch (p) *
        - SketchFillRegions
          - SketchFillRegion
        - SketchHatchRegions
          - SketchHatchRegion
    - DrawingViews
      - DrawingView [v]
        - AutomatedCenterlineSettings
        - BreakOperations
          - BreakOperation
        - BreakOutOperations
          - BreakOutOperation
        - ClientGraphicsCollection *
        - DataIO
        - DrawingCurvesEnumerator
          - DrawingCurve
            - DrawingCurveSegments
              - DrawingCurveSegment
        - DrawingSketches
        - DrawingViewEvents
        - DrawingViewHatchRegions
          - DrawingViewHatchRegion
            - DrawingViewHatchAreas
              - DrawingViewHatchArea
        - DrawingViewLabel
        - GraphicsDataSetsCollection
        - OriginIndicator
      - DetailDrawingView (v)
      - SectionDrawingView (v)
    - FeatureControlFrames
      - FeatureControlFrame
        - FeatureControlFrameRows
          - FeatureControlFrameRow
        - Leader *
    - GeometryIntent
    - HoleTables
      - HoleTable
        - HoleTableColumns
          - HoleTableColumn
            - UnitsFormatting
        - HoleTableRows
          - HoleTableRow
            - HoleTableCell
            - HoleTag
    - PartsLists
      - PartsList
        - PartsListColumns
          - PartsListColumn
        - PartsListRows
          - PartsListRow
            - PartsListCell
    - RevisionTables
      - RevisionTable
        - RevisionTableColumns
          - RevisionTableColumn
        - RevisionTableRows
          - RevisionTableRow
            - RevisionTableCell
    - SketchedSymbols
      - SketchedSymbol
        - Leader *
    - SurfaceTextureSymbols
      - SurfaceTextureSymbol
        - Leader *
        - SurfaceTextureSymbolDefinition [ii]
        - SurfaceTextureANSIDefinition (ii)
        - SurfaceTextureBSIDefinition (ii)
        - SurfaceTextureDINDefinition (ii)
        - SurfaceTextureGBDefinition (ii)
        - SurfaceTextureGOSTDefinition (ii)
        - SurfaceTextureISODefinition (ii)
        - SurfaceTextureJISDefinition (ii)
    - TitleBlock

PresentationDocument (a)

- DisplaySettings
- PresentationScenes
  - PresentationScene
    - PresentationComponent
      - PresentationBodiesEnumerator
        - PresentationBody
          - PresentationFacesEnumerator
            - PresentationFace
              - PresentationEdgesEnumerator
                - PresentationEdge
                  - PresentationVerticesEnumerator
                    - PresentationVertex
      - PresentationComponentsEnumerator
      - PresentationMeshFeatureSetsEnumerator
        - PresentationMeshFeatureSet
          - PresentationMeshFeature
            - PresentationMeshFeatureEntitiesEnumerator
              - PresentationMeshFeatureEntity
    - PresentationSnapshotViews
      - PresentationSnapshotView
      - PresentationTrails
        - PresentationTrail
          - PresentationTrailSegments
            - PresentationTrailSegment



Leaders

- Leader
  - LeaderNode
  - LeaderNodesEnumerator
    - LeaderNode

Attributes

- *Inventor Entity*
  - AttributeSets
    - AttributeSet
      - Attribute

Point Clouds

- PointClouds
  - PointCloud
    - PointCloudCrops
      - PointCloudCrop
    - PointCloudRegions
      - PointCloudRegion
    - PointCloudScans
      - PointCloudScan

Model Annotations

- ModelAnnotations
  - ModelAnnotation [ii]
  - ModelCompositeAnnotations
    - ModelCompositeAnnotation (ii)
      - ModelCompositeAnnotationDefinition
  - ModelDatumIdentifiers
    - ModelDatumIdentifier (ii)
      - ModelDatumIdentifierDefinition
  - ModelDimensions
    - ModelDimension (ii) [jj]
      - ModelDimensionDefinition [kk]
        - AnnotationPlane
        - ModelAnnotationText
        - Tolerance
    - AngularModelDimensions
      - AngularModelDimension (jj)
        - AngularModelDimensionDefinition (kk)
    - DiameterModelDimensions
      - DiameterModelDimension (jj)
        - DiameterModelDimensionDefinition (kk)
    - LinearModelDimensions
      - LinearModelDimension (jj)
        - LinearModelDimensionDefinition (kk)
    - RadiusModelDimensions
      - RadiusModelDimension (jj)
        - RadiusModelDimensionDefinition (kk)
  - ModelFeatureControlFrames
    - ModelFeatureControlFrame (ii)
      - ModelFeatureControlFrameDefinition
        - ModelFeatureControlFrameRows
          - ModelFeatureControlFrameRow
  - ModelGeneralNotes
    - ModelGeneralNote (ii)
      - ModelGeneralNoteDefinition
        - GeneralNoteSymbolDefinitions
          - GeneralNoteSymbolDefinition
  - ModelHoleThreadNotes
    - ModelHoleThreadNote (jj)
      - ModelHoleThreadNoteDefinition (kk)
  - ModelLeaderNotes
    - ModelLeaderNote (ii)
      - ModelLeaderNoteDefinition
        - AnnotationPlane
        - ModelLeader
          - ModelLeaderNodesEnumerator
            - ModelLeaderNode
  - ModelSurfaceTextureSymbols
    - ModelSurfaceTextureSymbol (ii)
      - ModelSurfaceTextureSymbolDefinition

Parameters

- Parameters
  - Parameter [i]
    - CustomPropertyFormat
    - ExpressionList
    - Tolerance
  - CustomParameterGroups
    - CustomParameterGroup
  - DerivedParameterTables
    - DerivedParameterTable
      - DerivedParameters
        - DerivedParameter
  - ModelParameters
    - ModelParameter (i)
  - ParameterTables
    - ParameterTable
      - TableParameters
        - TableParameter (i)
  - ReferenceParameters
    - ReferenceParameter (i)
  - UserParameters
    - UserParameter (i)

Apprentice

- ApprenticeServerComponent
  - ApprenticeServerDocument
    - ApprenticePrintManager
    - ClientViews
      - ClientView
  - ApprenticeServerDrawingDocument
    - ApprenticeDrawingPrintManager
  - DesignProjectManager
    - DesignProjects
      - ProjectPaths
        - ProjectPath
  - FileManager
    - FilesEnumerator
      - File
        - FileDescriptorsEnumerator
          - FileDescriptor
  - FileOptions
  - FileSaveAs
  - SoftwareVersion
  - TransientGeometry *
  - TransientObjects *

2D Sketch

- Sketch [p]
  - DataIO
  - DimensionConstraints
    - DimensionConstraint [s]
    - ArcLengthDimConstraint (s)
    - DiameterDimConstraint (s)
    - EllipseRadiusDimConstraint (s)
    - OffsetDimConstraint (s)
    - RadiusDimConstraint (s)
    - TangentDistanceDimConstraint (s)
    - ThreePointAngleDimConstraint (s)
    - TwoLineAngleDimConstraint (s)
    - TwoPointDistanceDimConstraint (s)
  - GeometricConstraints
    - GeometricConstraint [q]
    - CoincidentConstraint (q)
    - CollinearConstraint (q)
    - ConcentricConstraint (q)
    - EqualLengthConstraint (q)
    - EqualRadiusConstraint (q)
    - GroundConstraint (q)
    - HorizontalAlignConstraint (q)
    - HorizontalConstraint (q)
    - MidpointConstraint (q)
    - OffsetConstraint (q)
    - ParallelConstraint (q)
    - PatternConstraint (q)
    - PerpendicularConstraint (q)
    - SmoothConstraint (q)
    - SplineFitPointConstraint (q)
    - SymmetryConstraint (q)
    - TangentSketchConstraint (q)
    - VerticalAlignConstraint (q)
    - VerticalConstraint (q)
  - Profiles
    - Profile
      - ProfilePath
        - ProfileEntity
        - TextBox
      - RegionProperties
      - Wires
        - Wire
  - SketchEntitiesEnumerator
    - SketchEntity [r]
  - SketchArcs
    - SketchArc (r)
  - SketchCircles
    - SketchCircle (r)
  - SketchControlPointSplines
    - SketchControlPointSpline (r)
  - SketchEllipses
    - SketchEllipse (r)
  - SketchEllipticalArcs
    - SketchEllipticalArc (r)
  - SketchEquationCurves
    - SketchEquationCurve (r)
  - SketchFixedSplines
    - SketchFixedSpline (r)
  - SketchImages
    - SketchImage
  - SketchLines
    - SketchLine (r)
  - SketchOffsetSplines
    - SketchOffsetSpline (r)
  - SketchPoints
    - SketchPoint (r)
  - SketchSplines
    - SketchSpline (r)
      - SketchSplineHandle
  - TextBoxes
    - TextBox

3D Sketch

- Sketch3D
  - Profiles3D
    - Profile3D
      - ProfilePath3D
        - ProfileEntity3D
      - Wires
        - Wire
  - DimensionConstraints3D
    - DimensionConstraint3D [y]
    - LineLengthDimConstraint3D (y)
    - PointAndPlaneDistanceDimConstraint3D (y)
    - RadiusDimConstraint3D (y)
    - SplineLengthDimConstraint3D (y)
    - TwoLineAngleDimConstraint3D (y)
    - TwoPointDistanceDimConstraint3D (y)
  - GeometricConstraints3D
    - GeometricConstraint3D [h]
    - BendConstraint (h)
    - CoincidentConstraint3D (h)
    - CollinearConstraint3D (h)
    - CustomConstraint3D (h)
    - EqualConstraint3D (h)
    - GroundConstraint3D (h)
    - HelicalConstraint3D (h)
    - OnFaceConstraint3D (h)
    - ParallelConstraint3D (h)
    - ParallelToXAxisConstraint3D (h)
    - ParallelToXYPlaneConstraint3D (h)
    - ParallelToXZPlaneConstraint3D (h)
    - ParallelToYAxisConstraint3D (h)
    - ParallelToYZPlaneConstraint3D (h)
    - ParallelToZAxisConstraint3D (h)
    - PerpendicularConstraint3D (h)
    - SmoothConstraint3D (h)
    - SplineFitPointsConstraint3D (h)
    - TangentConstraint3D (h)
  - HelicalCurves
    - HelicalCurve
      - HelicalCurveDefinition [oo]
        - HelicalCurveShapeDefinitionRows
          - HelicalCurveShapeDefinitionRow
      - HelicalCurveConstantShapeDefinition (oo)
      - HelicalCurveVariableShapeDefinition (oo)
  - IntersectionCurves
    - IntersectionCurve
  - OnFaceCurves
    - OnFaceCurve (j)
  - ProjectToSurfaceCurves
    - ProjectToSurfaceCurve
  - SilhouetteCurves
    - SilhouetteCurve
  - SketchControlPointSplines3D
    - SketchControlPointSpline3D (j)
  - SketchEntities3DEnumerator
    - SketchEntity3D [j]
  - SketchArcs3D
    - SketchArc3D (j)
  - SketchCircles3D
    - SketchCircle3D (j)
  - SketchEllipses3D
    - SketchEllipse3D (j)
  - SketchEllipticalArcs3D
    - SketchEllipticalArc3D (j)
  - SketchEquationCurves3D
    - SketchEquationCurve3D (j)
  - SketchFixedSplines3D
    - SketchFixedSpline3D (j)
  - SketchLines3D
    - SketchLine3D (j)
  - SketchPoints3D
    - SketchPoint3D (j)
  - SketchSplines3D
    - SketchSpline3D (j)
      - SketchSplineHandle3D

BIM Exchange

- PartComponentDefinition
- AssemblyComponentDefinition
  - BIMComponent
    - BIMComponentDescription
      - BIMCompoonentPropertySets
        - BIMCompoonentPropertySet
          - BIMComponentProperty
    - BIMConnectorLinks
      - BIMConnectorLink
    - BIMConnectors
      - BIMConnector
        - BIMConnectorDefinition
      - BIMCableTrayConnector
        - BIMCableTrayConnectorDefinition
      - BIMConduitConnector
        - BIMConduitConnectorDefinition
      - BIMDuctConnector
        - BIMDuctConnectorDefinition
      - BIMElectricalConnector
        - BIMElectricalConnectorDefinition
      - BIMPipeConnector
        - BIMPipeConnectorDefinition

Dynamic Simulation

- SimulationManager
  - DynamicSimulations
    - DynamicSimulation
      - DSJoints
        - DSJoint
          - DSJointDefinition
            - DSDegreesOfFreedom
              - DSDegreeOfFreedom
                - DSResults
                  - DSResult
                - DSValue
                  - DSValueGraph
      - DSLoads
        - DSLoad
          - DSLoadDefinition
            - DSValue
              - DSValueGraph
      - DSSettings

Assets

(Materials and Appearances)

- Asset
  - AssetValue [mm]
  - BooleanAssetValue (mm)
  - ChoiceAssetValue (mm)
  - ColorAssetValue (mm)
  - FilenameAssetValue (mm)
  - FloatAssetValue (mm)
  - IntegerAssetValue (mm)
  - ReferenceAssetValue (mm)
  - StringAssetValue (mm)
  - TextureAssetValue (mm)
    - AssetTexture

B-Rep

- SurfaceBodies
  - SurfaceBody
    - DataIO
    - FaceShells
      - FaceShell
        - Faces
          - Face
            - EdgeLoops
              - EdgeLoop
                - Edges
                  - Edge
                    - CurveEvaluator
                    - Vertices
                      - Vertex
                    - Wire
            - EdgeUses
              - Curve2dEvaluator
              - EdgeUse
                - Wire
            - SurfaceEvaluator
    - Wires
      - Wire

Client Graphics

- DrawingView / ComponentDefinition / Sheet
  - ClientGraphicsCollection
  - InteractionGraphics
    - ClientGraphics
      - GraphicsNode
        - GraphicsPrimitive [gg]
        - CurveGraphics (gg)
        - LineGraphics (gg)
        - LineStripGraphics (gg)
        - PointGraphics (gg)
        - ComponentGraphics
        - SurfaceGraphics
          - SurfaceGraphicsEdgeList
            - SurfaceGraphicsEdge
          - SurfaceGraphicsFaceList
            - SurfaceGraphicsFace
          - SurfaceGraphicsVertexList
            - SurfaceGraphicsVertex
        - TextGraphics
        - TriangleFanGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - TriangleGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - TriangleStripGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - ViewList
- Document / DrawingView / Sheet
  - GraphicsDataSetsCollection
  - InteractionGraphics
    - GraphicsDataSets
      - GraphicsDataSet [dd]
      - GraphicsColorMapper
      - GraphicsColorSet (dd)
      - GraphicsCoordinateSet (dd)
      - GraphicsImageSet (dd)
      - GraphicsIndexSet (dd)
      - GraphicsNormalSet (dd)
      - GraphicsTextureCoordinateSet (dd)

Transient Geometry & Objects

Geometry

Arc2d, BSplineCurve2d, BSplineCurve2dDefinition, Circle2d, EllipseFull2d, EllipticalArc2d, Line2d, LineSegment2d, Point2d, Polyline2d

Arc3d, BSplineCurve, BSplineCurveDefinition, Circle, EllipseFull, EllipticalArc, Line, LineSegment, Point, Polyline3d

BSplineSurface, Cone, Cylinder, EllipticalCone, EllipticalCylinder, Plane, Sphere, Torus

Math Objects

Box, Box2d, Matrix, Matrix2d, OrientedBox, UnitVector, UnitVector2d, Vector, Vector2d

Utility Objects

Camera, Color, DataMedium, EdgeCollection, FaceCollection, FileMetadata, NameValueMap, ObjectCollection, ObjectCollectionByVariant, ObjectsEnumeratorByVariant, TranslationContext

Legend

Collection Objects: Objects

Standard Objects: Object

New Objects in this release: Object (dashed outline)

User Interface Related Objects: (red)

Part Document Related Objects: (green)

Assembly Document Related Objects: (blue)

Drawing Document Related Objects: (yellow)

Presentation Document Related Objects: (orange)

Base Class Objects: [x]

Derived Objects: (x)

See related object model diagram for this object at the bottom of the poster: *