X3D4 Node Inventory Comparison

X3D4 Players and Tools Coverage

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Maintained at https://www.web3d.org/specifications

X3D Architecture version 4.0 Node and Statement Support	X3D Players and Tools Coverage	updated 21 January 2023		https://www.web3d.org/specifications/X3dNodeInventoryComparison.xlsx https://www.web3d.org/specifications/X3dNodeInventoryComparison.pdf			
	X_ITE Player v8.4.4	**FreeWRL v5.1**	**view3dscene (Castle Game Engine) v6.4**	**X3DOM Player v1.8.1**	**InstantPlayer**	**Xj3D Player 2.1**	**X3D-Edit Authoring Tool 4.0**
	Supported Nodes	Conformance	Standard X3D Nodes	Nodes Index	Node types	Xj3D viewer: NPS source	X3D-Edit home
AcousticProperties							AcousticProperties
Analyser							
Anchor	Anchor	Anchor	Anchor	Anchor	Anchor	Anchor	Anchor
Appearance	Appearance	Appearance	Appearance	Appearance	Appearance	Appearance	Appearance
Arc2D	Arc2D	Arc2D		Arc2D	Arc2D	Arc2D	Arc2D
ArcClose2D	ArcClose2D	ArcClose2D		ArcClose2D	ArcClose2D		ArcClose2D
AudioClip	AudioClip	AudioClip	AudioClip	AudioClip	AudioClip	AudioClip	AudioClip
AudioDestination							
Background	Background	Background	Background	Background	Background	Background	Background
BallJoint	BallJoint	BallJoint		BallJoint		BallJoint	BallJoint
Billboard	Billboard	Billboard	Billboard	Billboard	Billboard	Billboard	Billboard
BiquadFilter							
BlendedVolumeStyle	BlendedVolumeStyle	BlendedVolumeStyle		BlendedVolumeStyle			BlendedVolumeStyle
BooleanFilter	BooleanFilter	BooleanFilter	BooleanFilter	BooleanFilter	BooleanFilter	BooleanFilter	BooleanFilter
BooleanSequencer	BooleanSequencer	BooleanSequencer	BooleanSequencer	BooleanSequencer	BooleanSequencer	BooleanSequencer	BooleanSequencer
BooleanToggle	BooleanToggle	BooleanToggle	BooleanToggle	BooleanToggle	BooleanToggle	BooleanToggle	BooleanToggle
BooleanTrigger	BooleanTrigger	BooleanTrigger	BooleanTrigger	BooleanTrigger	BooleanTrigger	BooleanTrigger	BooleanTrigger
BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle		BoundaryEnhancementVolumeStyle			BoundaryEnhancementVolumeStyle
BoundedPhysicsModel	BoundedPhysicsModel	BoundedPhysicsModel					
Box	Box	Box	Box	Box	Box	Box	Box
BufferAudioSource							
CADAssembly	CADAssembly	CADAssembly	CADAssembly	CADAssembly	CADAssembly	CADAssembly	CADAssembly
CADFace	CADFace	CADFace	CADFace	CADFace	CADFace	CADFace	CADFace
CADLayer	CADLayer	CADLayer	CADLayer	CADLayer	CADLayer	CADLayer	CADLayer
CADPart	CADPart	CADPart	CADPart	CADPart	CADPart	CADPart	CADPart
CartoonVolumeStyle	CartoonVolumeStyle	CartoonVolumeStyle		CartoonVolumeStyle			CartoonVolumeStyle
ChannelMerger							
ChannelSelector							
ChannelSplitter							
Circle2D	Circle2D	Circle2D	Circle2D	Circle2D	Circle2D		Circle2D
ClipPlane	ClipPlane	ClipPlane	ClipPlane	ClipPlane	ClipPlane	ClipPlane	ClipPlane
CollidableOffset	CollidableOffset	CollidableOffset				CollidableOffset	CollidableOffset
CollidableShape	CollidableShape	CollidableShape		CollidableShape		CollidableShape	CollidableShape
Collision	Collision	Collision	Collision	Collision	Collision	Collision	Collision
CollisionCollection	CollisionCollection	CollisionCollection		CollisionCollection		CollisionCollection	CollisionCollection
CollisionSensor	CollisionSensor	CollisionSensor		CollisionSensor		CollisionSensor	CollisionSensor
CollisionSpace	CollisionSpace	CollisionSpace				CollisionSpace	CollisionSpace
Color	Color	Color	Color	Color	Color	Color	Color
ColorChaser	ColorChaser	ColorChaser		ColorChaser	ColorChaser		ColorChaser
ColorDamper	ColorDamper	ColorDamper		ColorDamper	ColorDamper		ColorDamper
ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator
ColorRGBA	ColorRGBA	ColorRGBA	ColorRGBA	ColorRGBA	ColorRGBA	ColorRGBA	ColorRGBA
component	component	component	component	component	component	component	component
ComposedCubeMapTexture	ComposedCubeMapTexture	ComposedCubeMapTexture	ComposedCubeMapTexture	ComposedCubeMapTexture	ComposedCubeMapTexture		ComposedCubeMapTexture
ComposedShader	ComposedShader	ComposedShader	ComposedShader	ComposedShader	ComposedShader		ComposedShader
ComposedTexture3D	ComposedTexture3D	ComposedTexture3D	ComposedTexture3D	ComposedTexture3D	ComposedTexture3D	ComposedTexture3D	ComposedTexture3D
ComposedVolumeStyle	ComposedVolumeStyle	ComposedVolumeStyle		ComposedVolumeStyle			ComposedVolumeStyle
Cone	Cone	Cone	Cone	Cone	Cone	Cone	Cone
ConeEmitter	ConeEmitter	ConeEmitter					
connect	connect	connect	connect	** required for X3D Immersive Profile*	connect	connect	connect
Contact	Contact	Contact				Contact	Contact
Contour2D		Contour2D		Contour2D	Contour2D	Contour2D	Contour2D
ContourPolyline2D	ContourPolyline2D	ContourPolyline2D		ContourPolyline2D	ContourPolyline2D	ContourPolyline2D	ContourPolyline2D
Convolver							
Coordinate	Coordinate	Coordinate	Coordinate	Coordinate	Coordinate	Coordinate	Coordinate
CoordinateChaser	CoordinateChaser	CoordinateChaser			CoordinateChaser		
CoordinateDamper	CoordinateDamper	CoordinateDamper		CoordinateDamper	CoordinateDamper		CoordinateDamper
CoordinateDouble	CoordinateDouble	CoordinateDouble	** missing, suggested for HTML5*	CoordinateDouble	CoordinateDouble	** missing, suggested for HTML5*	CoordinateDouble
CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator
CoordinateInterpolator2D	CoordinateInterpolator2D	CoordinateInterpolator2D	CoordinateInterpolator2D	** missing, suggested for HTML5*	CoordinateInterpolator2D	CoordinateInterpolator2D	CoordinateInterpolator2D
Cylinder	Cylinder	Cylinder	Cylinder	Cylinder	Cylinder	Cylinder	Cylinder
CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor
Delay							
DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight
DISEntityManager						DISEntityManager	DISEntityManager
DISEntityTypeMapping						DISEntityTypeMapping	DISEntityTypeMapping
Disk2D	Disk2D	Disk2D		Disk2D	Disk2D	Disk2D	Disk2D
DoubleAxisHingeJoint	DoubleAxisHingeJoint	DoubleAxisHingeJoint		DoubleAxisHingeJoint		DoubleAxisHingeJoint	DoubleAxisHingeJoint
DynamicsCompressor							
EaseInEaseOut	EaseInEaseOut	EaseInEaseOut			EaseInEaseOut		
EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle		EdgeEnhancementVolumeStyle			EdgeEnhancementVolumeStyle
ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid
EspduTransform						EspduTransform	EspduTransform
ExplosionEmitter	ExplosionEmitter	ExplosionEmitter				ExplosionEmitter	3-Sep-17
EXPORT	EXPORT	EXPORT	EXPORT	** required for X3D Immersive Profile*	** required for X3D Immersive Profile*	** required for X3D Immersive Profile*	EXPORT

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	Supported Nodes	Conformance	Standard X3D Nodes	Nodes Index	Node types	Xj3D viewer: NPS source	X3D-Edit home
ExternProtoDeclare	ExternProtoDeclare	ExternProtoDeclare	ExternProtoDeclare	** required for X3D Immersive Profile*	ExternProtoDeclare	ExternProtoDeclare	ExternProtoDeclare
Extrusion	Extrusion	Extrusion	Extrusion	Extrusion	Extrusion	Extrusion	Extrusion
field	field	field	field	field	field	field	field
fieldValue	fieldValue	fieldValue	fieldValue	** required for X3D Immersive Profile*	fieldValue	fieldValue	fieldValue
FillProperties	FillProperties	FillProperties	** missing, suggested for HTML5*	** missing, suggested for HTML5*	FillProperties	** missing, suggested for HTML5*	FillProperties
FloatVertexAttribute	FloatVertexAttribute	FloatVertexAttribute	FloatVertexAttribute	FloatVertexAttribute	FloatVertexAttribute		FloatVertexAttribute
Fog	Fog	Fog	Fog	Fog	Fog	Fog	Fog
FogCoordinate	FogCoordinate	FogCoordinate	FogCoordinate		FogCoordinate	FogCoordinate	
FontStyle	FontStyle	FontStyle	FontStyle	FontStyle	FontStyle	FontStyle	FontStyle
ForcePhysicsModel	ForcePhysicsModel	ForcePhysicsModel					
Gain							
GeneratedCubeMapTexture	GeneratedCubeMapTexture	GeneratedCubeMapTexture	GeneratedCubeMapTexture	GeneratedCubeMapTexture	GeneratedCubeMapTexture		
GeoCoordinate	GeoCoordinate	GeoCoordinate	** missing, suggested for HTML5*	GeoCoordinate	GeoCoordinate	GeoCoordinate	GeoCoordinate
GeoElevationGrid	GeoElevationGrid	GeoElevationGrid	** missing, suggested for HTML5*	GeoElevationGrid	GeoElevationGrid	GeoElevationGrid	GeoElevationGrid
GeoLocation	GeoLocation	GeoLocation	** missing, suggested for HTML5*	GeoLocation	GeoLocation	GeoLocation	GeoLocation
GeoLOD	GeoLOD	GeoLOD	** missing, suggested for HTML5*	GeoLOD	GeoLOD	GeoLOD	GeoLOD
GeoMetadata	GeoMetadata	GeoMetadata	** missing, suggested for HTML5*	GeoMetadata	GeoMetadata	GeoMetadata	GeoMetadata
GeoOrigin	GeoOrigin	GeoOrigin	** missing, suggested for HTML5*	GeoOrigin	GeoOrigin	GeoOrigin	GeoOrigin
GeoPositionInterpolator	GeoPositionInterpolator	GeoPositionInterpolator	** missing, suggested for HTML5*	GeoPositionInterpolator	GeoPositionInterpolator	GeoPositionInterpolator	GeoPositionInterpolator
GeoProximitySensor	GeoProximitySensor	GeoProximitySensor	** missing, suggested for HTML5*	** missing, suggested for HTML5*	GeoProximitySensor	** missing, suggested for HTML5*	GeoProximitySensor
GeoTouchSensor	GeoTouchSensor	GeoTouchSensor	** missing, suggested for HTML5*	** missing, suggested for HTML5*	GeoTouchSensor	GeoTouchSensor	GeoTouchSensor
GeoTransform	GeoTransform	GeoTransform	** missing, suggested for HTML5*	GeoTransform	GeoTransform	GeoTransform	GeoTransform
GeoViewpoint	GeoViewpoint	GeoViewpoint	** missing, suggested for HTML5*	GeoViewpoint	GeoViewpoint	GeoViewpoint	GeoViewpoint
Group	Group	Group	Group	Group	Group	Group	Group
HAnimDisplacer	HAnimDisplacer	HAnimDisplacer	HAnimDisplacer	HAnimDisplacer	HAnimDisplacer	HAnimDisplacer	HAnimDisplacer
HAnimHumanoid	HAnimHumanoid	HAnimHumanoid	HAnimHumanoid	HAnimHumanoid	HAnimHumanoid	HAnimHumanoid	HAnimHumanoid
HAnimJoint	HAnimJoint	HAnimJoint	HAnimJoint	HAnimJoint	HAnimJoint	HAnimJoint	HAnimJoint
HAnimMotion		HAnimMotion					HAnimMotion
HAnimSegment	HAnimSegment	HAnimSegment	HAnimSegment	HAnimSegment	HAnimSegment	HAnimSegment	HAnimSegment
HAnimSite	HAnimSite	HAnimSite	HAnimSite	HAnimSite	HAnimSite	HAnimSite	HAnimSite
head	head	head	head	head	head	head	head
ImageCubeMapTexture	ImageCubeMapTexture	ImageCubeMapTexture	ImageCubeMapTexture		ImageCubeMapTexture		
ImageTexture	ImageTexture	ImageTexture	ImageTexture	ImageTexture	ImageTexture	ImageTexture	ImageTexture
ImageTexture3D	ImageTexture3D	ImageTexture3D	ImageTexture3D	ImageTexture3D	ImageTexture3D		ImageTexture3D
IMPORT	IMPORT	IMPORT	IMPORT	** required for X3D Immersive Profile*	** required for X3D Immersive Profile*	** required for X3D Immersive Profile*	IMPORT
IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet
IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet
IndexedQuadSet	IndexedQuadSet	IndexedQuadSet	IndexedQuadSet	IndexedQuadSet	IndexedQuadSet	IndexedQuadSet	IndexedQuadSet
IndexedTriangleFanSet	IndexedTriangleFanSet	IndexedTriangleFanSet	IndexedTriangleFanSet	** missing, suggested for HTML5*	IndexedTriangleFanSet	IndexedTriangleFanSet	IndexedTriangleFanSet
IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet
IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet
Inline	Inline	Inline	Inline	Inline	Inline	Inline	Inline
IntegerSequencer	IntegerSequencer	IntegerSequencer	IntegerSequencer	IntegerSequencer	IntegerSequencer	IntegerSequencer	IntegerSequencer
IntegerTrigger	IntegerTrigger	IntegerTrigger	IntegerTrigger	IntegerTrigger	IntegerTrigger	IntegerTrigger	IntegerTrigger
IS	IS	IS	IS	** required for X3D Immersive Profile*	IS	IS	IS
IsoSurfaceVolumeData	IsoSurfaceVolumeData	IsoSurfaceVolumeData		IsoSurfaceVolumeData			IsoSurfaceVolumeData
KeySensor	KeySensor	KeySensor	KeySensor	** missing, suggested for HTML5*	KeySensor	KeySensor	KeySensor
Layer	Layer	Layer			Layer	Layer	
LayerSet	LayerSet	LayerSet			LayerSet	LayerSet	
Layout	Layout	Layout			Layout		
LayoutGroup	LayoutGroup	LayoutGroup			LayoutGroup		
LayoutLayer	LayoutLayer	LayoutLayer			LayoutLayer		
LinePickSensor	LinePickSensor	LinePickSensor					
LineProperties	LineProperties	LineProperties	LineProperties	LineProperties	LineProperties	LineProperties	LineProperties
LineSet	LineSet	LineSet	LineSet	LineSet	LineSet	LineSet	LineSet
ListenerPointSource							
LoadSensor	LoadSensor	LoadSensor	** missing, suggested for HTML5*	** missing, suggested for HTML5*	LoadSensor	LoadSensor	LoadSensor
LocalFog	LocalFog	LocalFog	LocalFog		LocalFog	LocalFog	LocalFog
LOD	LOD	LOD	LOD	LOD	LOD	LOD	LOD
Material	Material	Material	Material	Material	Material	Material	Material
Matrix3VertexAttribute	Matrix3VertexAttribute	Matrix3VertexAttribute	Matrix3VertexAttribute		Matrix3VertexAttribute		Matrix3VertexAttribute
Matrix4VertexAttribute	Matrix4VertexAttribute	Matrix4VertexAttribute	Matrix4VertexAttribute		Matrix4VertexAttribute		Matrix4VertexAttribute
meta	meta	meta	meta	meta	meta	meta	meta
MetadataBoolean	MetadataBoolean	MetadataBoolean	MetadataBoolean	MetadataBoolean	** missing, suggested for HTML5*	MetadataBoolean	MetadataBoolean
MetadataDouble	MetadataDouble	MetadataDouble	MetadataDouble	MetadataDouble	MetadataDouble	MetadataDouble	MetadataDouble
MetadataFloat	MetadataFloat	MetadataFloat	MetadataFloat	MetadataFloat	MetadataFloat	MetadataFloat	MetadataFloat
MetadataInteger	MetadataInteger	MetadataInteger	MetadataInteger	MetadataInteger	MetadataInteger	MetadataInteger	MetadataInteger
MetadataSet	MetadataSet	MetadataSet	MetadataSet	MetadataSet	MetadataSet	MetadataSet	MetadataSet
MetadataString	MetadataString	MetadataString	MetadataString	MetadataString	MetadataString	MetadataString	MetadataString
MicrophoneSource							
MotorJoint		MotorJoint		MotorJoint		MotorJoint	MotorJoint
MovieTexture	MovieTexture	MovieTexture	MovieTexture	MovieTexture	MovieTexture	MovieTexture	MovieTexture
MultiTexture	MultiTexture	MultiTexture	MultiTexture	MultiTexture	MultiTexture	MultiTexture	MultiTexture
MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate	

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	Supported Nodes	Conformance	Standard X3D Nodes	Nodes Index	Node types	Xj3D viewer: NPS source	X3D-Edit home
MultiTextureTransform	MultiTextureTransform	MultiTextureTransform	MultiTextureTransform		MultiTextureTransform	MultiTextureTransform	MultiTextureTransform
NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo
Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator
NurbsCurve	NurbsCurve	NurbsCurve	NurbsCurve	NurbsCurve	NurbsCurve	NurbsCurve	NurbsCurve
NurbsCurve2D	NurbsCurve2D	NurbsCurve2D		NurbsCurve2D	NurbsCurve2D	NurbsCurve2D	NurbsCurve2D
NurbsOrientationInterpolator	NurbsOrientationInterpolator	NurbsOrientationInterpolator	NurbsOrientationInterpolator	NurbsOrientationInterpolator	NurbsOrientationInterpolator		NurbsOrientationInterpolator
NurbsPatchSurface	NurbsPatchSurface	NurbsPatchSurface	NurbsPatchSurface		NurbsPatchSurface	NurbsPatchSurface	NurbsPatchSurface
NurbsPositionInterpolator	NurbsPositionInterpolator	NurbsPositionInterpolator	NurbsPositionInterpolator	NurbsPositionInterpolator	NurbsPositionInterpolator		NurbsPositionInterpolator
NurbsSet	NurbsSet	NurbsSet			NurbsSet		NurbsSet
NurbsSurfaceInterpolator	NurbsSurfaceInterpolator	NurbsSurfaceInterpolator	NurbsSurfaceInterpolator	NurbsSurfaceInterpolator	NurbsSurfaceInterpolator		NurbsSurfaceInterpolator
NurbsSweptSurface	NurbsSweptSurface	NurbsSweptSurface			NurbsSweptSurface		NurbsSweptSurface
NurbsSwungSurface	NurbsSwungSurface	NurbsSwungSurface			NurbsSwungSurface		NurbsSwungSurface
NurbsTextureCoordinate	NurbsTextureCoordinate	NurbsTextureCoordinate			NurbsTextureCoordinate		NurbsTextureCoordinate
NurbsTrimmedSurface		NurbsTrimmedSurface	NurbsTrimmedSurface	NurbsTrimmedSurface	NurbsTrimmedSurface	NurbsTrimmedSurface	NurbsTrimmedSurface
OpacityMapVolumeStyle	OpacityMapVolumeStyle	OpacityMapVolumeStyle		OpacityMapVolumeStyle			OpacityMapVolumeStyle
OrientationChaser	OrientationChaser	OrientationChaser		OrientationChaser	OrientationChaser		OrientationChaser
OrientationDamper	OrientationDamper	OrientationDamper		OrientationDamper	OrientationDamper		OrientationDamper
OrientationInterpolator	OrientationInterpolator	OrientationInterpolator	OrientationInterpolator	OrientationInterpolator	OrientationInterpolator	OrientationInterpolator	OrientationInterpolator
OrthoViewpoint	OrthoViewpoint	OrthoViewpoint	OrthoViewpoint	OrthoViewpoint	OrthoViewpoint	OrthoViewpoint	OrthoViewpoint
OscillatorSource							
PackagedShader		PackagedShader					PackagedShader
ParticleSystem	ParticleSystem	ParticleSystem				ParticleSystem	
PeriodicWave							
PhysicalMaterial	PhysicalMaterial	PhysicalMaterial					
PickableGroup	PickableGroup	PickableGroup				PickableGroup	
PixelTexture	PixelTexture	PixelTexture	PixelTexture	PixelTexture	PixelTexture	PixelTexture	PixelTexture
PixelTexture3D	PixelTexture3D	PixelTexture3D	PixelTexture3D	PixelTexture3D	PixelTexture3D	PixelTexture3D	PixelTexture3D
PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor
PointEmitter	PointEmitter	PointEmitter				PointEmitter	
PointLight	PointLight	PointLight	PointLight	PointLight	PointLight	PointLight	PointLight
PointPickSensor	PointPickSensor	PointPickSensor					
PointProperties	PointProperties	PointProperties				PointProperties	
PointSet	PointSet	PointSet	PointSet	PointSet	PointSet	PointSet	PointSet
Polyline2D	Polyline2D	Polyline2D		Polyline2D	Polyline2D	Polyline2D	Polyline2D
PolylineEmitter	PolylineEmitter	PolylineEmitter				PolylineEmitter	
Polypoint2D	Polypoint2D	Polypoint2D		Polypoint2D	Polypoint2D	Polypoint2D	Polypoint2D
PositionChaser	PositionChaser	PositionChaser		PositionChaser	PositionChaser		PositionChaser
PositionChaser2D	PositionChaser2D	PositionChaser2D		PositionChaser2D	PositionChaser2D		PositionChaser2D
PositionDamper	PositionDamper	PositionDamper		PositionDamper	PositionDamper		PositionDamper
PositionDamper2D	PositionDamper2D	PositionDamper2D		PositionDamper2D	PositionDamper2D		PositionDamper2D
PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator
PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D
PrimitivePickSensor	PrimitivePickSensor	PrimitivePickSensor					
ProgramShader		ProgramShader			ProgramShader		ProgramShader
ProjectionVolumeStyle	ProjectionVolumeStyle	ProjectionVolumeStyle		ProjectionVolumeStyle			ProjectionVolumeStyle
ProtoBody	ProtoBody	ProtoBody	ProtoBody	** required for X3D Immersive Profile*	ProtoBody	ProtoBody	ProtoBody
ProtoDeclare	ProtoDeclare	ProtoDeclare	ProtoDeclare	** required for X3D Immersive Profile*	ProtoDeclare	ProtoDeclare	ProtoDeclare
ProtoInstance	ProtoInstance	ProtoInstance	ProtoInstance	** required for X3D Immersive Profile*	ProtoInstance	ProtoInstance	ProtoInstance
ProtoInterface	ProtoInterface	ProtoInterface	ProtoInterface	** required for X3D Immersive Profile*	ProtoInterface	ProtoInterface	ProtoInterface
ProximitySensor	ProximitySensor	ProximitySensor	ProximitySensor	** required for X3D Immersive Profile*	ProximitySensor	ProximitySensor	ProximitySensor
QuadSet	QuadSet	QuadSet	QuadSet	QuadSet	QuadSet	QuadSet	QuadSet
ReceiverPdu		ReceiverPdu					ReceiverPdu
Rectangle2D	Rectangle2D	Rectangle2D	Rectangle2D	Rectangle2D	Rectangle2D	Rectangle2D	Rectangle2D
RigidBody	RigidBody	RigidBody		RigidBody		RigidBody	RigidBody
RigidBodyCollection	RigidBodyCollection	RigidBodyCollection		RigidBodyCollection		RigidBodyCollection	RigidBodyCollection
ROUTE	ROUTE	ROUTE	ROUTE	ROUTE	ROUTE	ROUTE	ROUTE
ScalarChaser	ScalarChaser	ScalarChaser		ScalarChaser	ScalarChaser		ScalarChaser
ScalarDamper	ScalarDamper	ScalarDamper		ScalarDamper	ScalarDamper		ScalarDamper
ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator
Scene	Scene	Scene	Scene	Scene	Scene	Scene	Scene
ScreenFontStyle	ScreenFontStyle	ScreenFontStyle		** missing, suggested for HTML5*			
ScreenGroup	ScreenGroup	ScreenGroup		** missing, suggested for HTML5*	ScreenGroup		
Script	Script	Script	Script	** required for X3D Immersive Profile*	Script	Script	Script
SegmentedVolumeData	SegmentedVolumeData	SegmentedVolumeData		SegmentedVolumeData			SegmentedVolumeData
ShadedVolumeStyle	ShadedVolumeStyle	ShadedVolumeStyle		ShadedVolumeStyle			ShadedVolumeStyle
ShaderPart	ShaderPart	ShaderPart	ShaderPart	ShaderPart	ShaderPart		ShaderPart
ShaderProgram		ShaderProgram			ShaderProgram		ShaderProgram
Shape	Shape	Shape	Shape	Shape	Shape	Shape	Shape
SignalPdu		SignalPdu					SignalPdu
SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle		SilhouetteEnhancementVolumeStyle			SilhouetteEnhancementVolumeStyle
SingleAxisHingeJoint	SingleAxisHingeJoint	SingleAxisHingeJoint		SingleAxisHingeJoint		SingleAxisHingeJoint	SingleAxisHingeJoint
SliderJoint	SliderJoint	SliderJoint		SliderJoint		SliderJoint	SliderJoint
Sound	Sound	Sound	Sound	Sound	Sound	Sound	Sound

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SpatialSound		SpatialSound					
Sphere	Sphere	Sphere	Sphere	Sphere	Sphere	Sphere	Sphere
SphereSensor	SphereSensor	SphereSensor	SphereSensor	SphereSensor	SphereSensor	SphereSensor	SphereSensor
SplinePositionInterpolator	SplinePositionInterpolator	SplinePositionInterpolator		SplinePositionInterpolator	SplinePositionInterpolator		
SplinePositionInterpolator2D	SplinePositionInterpolator2D	SplinePositionInterpolator2D			SplinePositionInterpolator2D		
SplineScalarInterpolator	SplineScalarInterpolator	SplineScalarInterpolator			SplineScalarInterpolator		
SpotLight	SpotLight	SpotLight	SpotLight	SpotLight	SpotLight	SpotLight	SpotLight
SquadOrientationInterpolator	SquadOrientationInterpolator	SquadOrientationInterpolator			SquadOrientationInterpolator		
StaticGroup	StaticGroup	StaticGroup	StaticGroup	StaticGroup	StaticGroup	StaticGroup	StaticGroup
StreamAudioDestination							
StreamAudioSource							
StringSensor	StringSensor	StringSensor	StringSensor	** missing, suggested for HTML5*	StringSensor	StringSensor	StringSensor
SurfaceEmitter	SurfaceEmitter	SurfaceEmitter					
Switch	Switch	Switch	Switch	Switch	Switch	Switch	Switch
TexCoordChaser2D	TexCoordChaser2D	TexCoordChaser2D			TexCoordChaser2D		TexCoordChaser2D
TexCoordDamper2D	TexCoordDamper2D	TexCoordDamper2D		TexCoordDamper2D	TexCoordDamper2D		TexCoordDamper2D
Text	Text	Text	Text	Text	Text	Text	Text
TextureBackground	TextureBackground	TextureBackground	TextureBackground	** missing, suggested for HTML5*	TextureBackground	TextureBackground	TextureBackground
TextureCoordinate	TextureCoordinate	TextureCoordinate	TextureCoordinate	TextureCoordinate	TextureCoordinate	TextureCoordinate	TextureCoordinate
TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D
TextureCoordinate4D	TextureCoordinate4D	TextureCoordinate4D	TextureCoordinate4D		TextureCoordinate4D	TextureCoordinate4D	TextureCoordinate4D
TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator
TextureProjector		TextureProjector					
TextureProjectorParallel		TextureProjectorParallel					
TextureProperties	TextureProperties	TextureProperties	TextureProperties	TextureProperties	TextureProperties	TextureProperties	TextureProperties
TextureTransform	TextureTransform	TextureTransform	TextureTransform	TextureTransform	TextureTransform	TextureTransform	TextureTransform
TextureTransform3D	TextureTransform3D	TextureTransform3D	TextureTransform3D	TextureTransform3D	TextureTransform3D	TextureTransform3D	TextureTransform3D
TextureTransformMatrix3D	TextureTransformMatrix3D	TextureTransformMatrix3D	TextureTransformMatrix3D	TextureTransformMatrix3D	TextureTransformMatrix3D		TextureTransformMatrix3D
TimeSensor	TimeSensor	TimeSensor	TimeSensor	TimeSensor	TimeSensor	TimeSensor	TimeSensor
TimeTrigger	TimeTrigger	TimeTrigger	TimeTrigger	TimeTrigger	TimeTrigger	TimeTrigger	TimeTrigger
ToneMappedVolumeStyle	ToneMappedVolumeStyle	ToneMappedVolumeStyle		ToneMappedVolumeStyle			ToneMappedVolumeStyle
TouchSensor	TouchSensor	TouchSensor	TouchSensor	TouchSensor	TouchSensor	TouchSensor	TouchSensor
Transform	Transform	Transform	Transform	Transform	Transform	Transform	Transform
TransformSensor	TransformSensor	TransformSensor			TransformSensor		
TransmitterPdu		TransmitterPdu					TransmitterPdu
TriangleFanSet	TriangleFanSet	TriangleFanSet	TriangleFanSet		TriangleFanSet	TriangleFanSet	TriangleFanSet
TriangleSet	TriangleSet	TriangleSet	TriangleSet	TriangleSet	TriangleSet	TriangleSet	TriangleSet
TriangleSet2D	TriangleSet2D	TriangleSet2D		TriangleSet2D	TriangleSet2D	TriangleSet2D	TriangleSet2D
TriangleStripSet	TriangleStripSet	TriangleStripSet	TriangleStripSet		TriangleStripSet	TriangleStripSet	TriangleStripSet
TwoSidedMaterial	TwoSidedMaterial	TwoSidedMaterial		TwoSidedMaterial	TwoSidedMaterial	TwoSidedMaterial	TwoSidedMaterial
UNIT	UNIT	UNIT	UNIT	** missing, suggested for HTML5*	** missing, suggested for HTML5*	** missing, suggested for HTML5*	unit
UniversalJoint		UniversalJoint		UniversalJoint		UniversalJoint	UniversalJoint
UnlitMaterial	UnlitMaterial	UnlitMaterial					
Viewpoint	Viewpoint	Viewpoint	Viewpoint	Viewpoint	Viewpoint	Viewpoint	Viewpoint
ViewpointGroup	ViewpointGroup	ViewpointGroup	ViewpointGroup	** missing, suggested for HTML5*	ViewpointGroup	** missing, suggested for HTML5*	ViewpointGroup
Viewport	Viewport	Viewport			Viewport		
VisibilitySensor	VisibilitySensor	VisibilitySensor	VisibilitySensor		VisibilitySensor	VisibilitySensor	VisibilitySensor
VolumeData	VolumeData	VolumeData		VolumeData			VolumeData
VolumeEmitter	VolumeEmitter	VolumeEmitter					
VolumePickSensor	VolumePickSensor	VolumePickSensor					
WindPhysicsModel	WindPhysicsModel	WindPhysicsModel				WindPhysicsModel	
WorldInfo	WorldInfo	WorldInfo	WorldInfo	WorldInfo	WorldInfo	WorldInfo	WorldInfo
X3D	X3D	X3D	X3D	X3D	X3D	X3D	X3D
Supported nodes and statements:	87%	92%	52%	62%	71%	62%	80%
276	241	255	144	171	197	172	220
Unimplemented nodes and statements:							
0	35	21	132	105	79	104	56
References							
X3D v4.0 Architecture Draft Specification	X_ITE supported node list	FreeWRL supported node list	Castle Game Engine documentation	X3DOM supported node list X3DOM Node Types list	InstantReality	Xj3D SourceForge	X3D-Edit 4.0 Authoring Tool
HTML5 support goals							
** required for X3D Immersive Profile*	includes all Immersive Profile nodes	includes all Immersive Profile nodes	includes all Immersive Profile nodes	12	2	2	includes all Immersive Profile nodes
** suggested for HTML5 support*	0	0	14	13	2	5	includes all suggested HTML5 nodes
**** priority nodes and statements missing:***	**0**	**0**	**14**	**25**	**4**	**7**	**0**

X3D Codebases for Scene Access Interface (SAI)	X3D version 4.0 Node and Statement Support		updated 16 January 2023	https://www.web3d.org/specifications/X3dNodeInventoryComparison.xlsx https://www.web3d.org/specifications/X3dNodeInventoryComparison.pdf			
X3D Nodes and Statements	**JavaScript X3DJSONLD**	**Java X3DJSAIL**	**Python Package**	**C implementation**	**C++ implementation**	**C# implementation**	**Turtle, RDF encodings**
X3D Unified Object Model (X3DUOM)	X3D to JSON Converter	X3DJSAIL	Python X3D Package	(work in progress)	(work in progress)	(work in progress)	X3D Ontology
AcousticProperties		AcousticProperties	AcousticProperties				AcousticProperties
Analyser		Analyser	Analyser				Analyser
Anchor		Anchor	Anchor				Anchor
Appearance	Can John Carlson's open-source X3DJSONLD be regularized to use our autogeneration capabilities and match JavaScript SAI standard? These need to be designed consistently with the draft X3D JSON encoding.	Appearance	Appearance	Example codebase templates provided by Myeong Won Lee. TODO apply X3DUOM code-autogeneration patterns, similar to Java, Python and Turtle. https://sourceforge.net/p/x3d/code/HEAD/tree/www.web3d.org/x3d/languages			Appearance
Arc2D		Arc2D	Arc2D				Arc2D
ArcClose2D		ArcClose2D	ArcClose2D				ArcClose2D
AudioClip		AudioClip	AudioClip				AudioClip
AudioDestination		AudioDestination	AudioDestination				AudioDestination
Background		Background	Background				Background
BallJoint		BallJoint	BallJoint				BallJoint
Billboard		Billboard	Billboard				Billboard
BiquadFilter		BiquadFilter	BiquadFilter				BiquadFilter
BlendedVolumeStyle		BlendedVolumeStyle	BlendedVolumeStyle				BlendedVolumeStyle
BooleanFilter		BooleanFilter	BooleanFilter				BooleanFilter
BooleanSequencer		BooleanSequencer	BooleanSequencer				BooleanSequencer
BooleanToggle		BooleanToggle	BooleanToggle				BooleanToggle
BooleanTrigger		BooleanTrigger	BooleanTrigger				BooleanTrigger
BoundaryEnhancementVolumeStyle		BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle				BoundaryEnhancementVolumeStyle
BoundedPhysicsModel		BoundedPhysicsModel	BoundedPhysicsModel				BoundedPhysicsModel
Box		Box	Box				Box
BufferAudioSource		BufferAudioSource	BufferAudioSource				BufferAudioSource
CADAssembly		CADAssembly	CADAssembly				CADAssembly
CADFace		CADFace	CADFace				CADFace
CADLayer		CADLayer	CADLayer				CADLayer
CADPart		CADPart	CADPart				CADPart
CartoonVolumeStyle		CartoonVolumeStyle	CartoonVolumeStyle				CartoonVolumeStyle
ChannelMerger		ChannelMerger	ChannelMerger				ChannelMerger
ChannelSelector		ChannelSelector	ChannelSelector				ChannelSelector
ChannelSplitter		ChannelSplitter	ChannelSplitter				ChannelSplitter
Circle2D		Circle2D	Circle2D				Circle2D
ClipPlane		ClipPlane	ClipPlane				ClipPlane
CollidableOffset		CollidableOffset	CollidableOffset				CollidableOffset
CollidableShape		CollidableShape	CollidableShape				CollidableShape
Collision		Collision	Collision				Collision
CollisionCollection		CollisionCollection	CollisionCollection				CollisionCollection
CollisionSensor		CollisionSensor	CollisionSensor				CollisionSensor
CollisionSpace		CollisionSpace	CollisionSpace				CollisionSpace
Color		Color	Color				Color
ColorChaser		ColorChaser	ColorChaser				ColorChaser
ColorDamper		ColorDamper	ColorDamper				ColorDamper
ColorInterpolator		ColorInterpolator	ColorInterpolator				ColorInterpolator
ColorRGBA		ColorRGBA	ColorRGBA				ColorRGBA
component		component	component				component
ComposedCubeMapTexture		ComposedCubeMapTexture	ComposedCubeMapTexture				ComposedCubeMapTexture
ComposedShader		ComposedShader	ComposedShader				ComposedShader
ComposedTexture3D		ComposedTexture3D	ComposedTexture3D				ComposedTexture3D
ComposedVolumeStyle		ComposedVolumeStyle	ComposedVolumeStyle				ComposedVolumeStyle
Cone		Cone	Cone				Cone
ConeEmitter		ConeEmitter	ConeEmitter				ConeEmitter
connect		connect	connect				connect
Contact		Contact	Contact				Contact
Contour2D		Contour2D	Contour2D				Contour2D
ContourPolyline2D		ContourPolyline2D	ContourPolyline2D				ContourPolyline2D
Convolver		Convolver	Convolver				Convolver
Coordinate		Coordinate	Coordinate				Coordinate
CoordinateChaser		CoordinateChaser	CoordinateChaser				CoordinateChaser
CoordinateDamper		CoordinateDamper	CoordinateDamper				CoordinateDamper
CoordinateDouble		CoordinateDouble	CoordinateDouble				CoordinateDouble
CoordinateInterpolator		CoordinateInterpolator	CoordinateInterpolator				CoordinateInterpolator
CoordinateInterpolator2D		CoordinateInterpolator2D	CoordinateInterpolator2D				CoordinateInterpolator2D
Cylinder		Cylinder	Cylinder				Cylinder
CylinderSensor		CylinderSensor	CylinderSensor				CylinderSensor
Delay		Delay	Delay				Delay

DirectionalLight		DirectionalLight	DirectionalLight				DirectionalLight
DISEntityManager		DISEntityManager	DISEntityManager				DISEntityManager
DISEntityTypeMapping		DISEntityTypeMapping	DISEntityTypeMapping				DISEntityTypeMapping
Disk2D		Disk2D	Disk2D				Disk2D
DoubleAxisHingeJoint		DoubleAxisHingeJoint	DoubleAxisHingeJoint				DoubleAxisHingeJoint
DynamicsCompressor		DynamicsCompressor	DynamicsCompressor				DynamicsCompressor
EaseInEaseOut		EaseInEaseOut	EaseInEaseOut				EaseInEaseOut
EdgeEnhancementVolumeStyle		EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle				EdgeEnhancementVolumeStyle
ElevationGrid		ElevationGrid	ElevationGrid				ElevationGrid
EspduTransform		EspduTransform	EspduTransform				EspduTransform
ExplosionEmitter		ExplosionEmitter	ExplosionEmitter				ExplosionEmitter
EXPORT		EXPORT	EXPORT				EXPORT
ExternProtoDeclare		ExternProtoDeclare	ExternProtoDeclare				ExternProtoDeclare
Extrusion		Extrusion	Extrusion				Extrusion
field		field	field				field
fieldValue		fieldValue	fieldValue				fieldValue
FillProperties		FillProperties	FillProperties				FillProperties
FloatVertexAttribute		FloatVertexAttribute	FloatVertexAttribute				FloatVertexAttribute
Fog		Fog	Fog				Fog
FogCoordinate		FogCoordinate	FogCoordinate				FogCoordinate
FontStyle		FontStyle	FontStyle				FontStyle
ForcePhysicsModel		ForcePhysicsModel	ForcePhysicsModel				ForcePhysicsModel
Gain		Gain	Gain				Gain
GeneratedCubeMapTexture		GeneratedCubeMapTexture	GeneratedCubeMapTexture				GeneratedCubeMapTexture
GeoCoordinate		GeoCoordinate	GeoCoordinate				GeoCoordinate
GeoElevationGrid		GeoElevationGrid	GeoElevationGrid				GeoElevationGrid
GeoLocation		GeoLocation	GeoLocation				GeoLocation
GeoLOD		GeoLOD	GeoLOD				GeoLOD
GeoMetadata		GeoMetadata	GeoMetadata				GeoMetadata
GeoOrigin		GeoOrigin	GeoOrigin				GeoOrigin
GeoPositionInterpolator		GeoPositionInterpolator	GeoPositionInterpolator				GeoPositionInterpolator
GeoProximitySensor		GeoProximitySensor	GeoProximitySensor				GeoProximitySensor
GeoTouchSensor		GeoTouchSensor	GeoTouchSensor				GeoTouchSensor
GeoTransform		GeoTransform	GeoTransform				GeoTransform
GeoViewpoint		GeoViewpoint	GeoViewpoint				GeoViewpoint
Group		Group	Group				Group
HAnimDisplacer		HAnimDisplacer	HAnimDisplacer				HAnimDisplacer
HAnimHumanoid		HAnimHumanoid	HAnimHumanoid				HAnimHumanoid
HAnimJoint		HAnimJoint	HAnimJoint				HAnimJoint
HAnimMotion		HAnimMotion	HAnimMotion				HAnimMotion
HAnimSegment		HAnimSegment	HAnimSegment				HAnimSegment
HAnimSite		HAnimSite	HAnimSite				HAnimSite
head		head	head				head
ImageCubeMapTexture		ImageCubeMapTexture	ImageCubeMapTexture				ImageCubeMapTexture
ImageTexture		ImageTexture	ImageTexture				ImageTexture
ImageTexture3D		ImageTexture3D	ImageTexture3D				ImageTexture3D
IMPORT		IMPORT	IMPORT				IMPORT
IndexedFaceSet		IndexedFaceSet	IndexedFaceSet				IndexedFaceSet
IndexedLineSet		IndexedLineSet	IndexedLineSet				IndexedLineSet
IndexedQuadSet		IndexedQuadSet	IndexedQuadSet				IndexedQuadSet
IndexedTriangleFanSet		IndexedTriangleFanSet	IndexedTriangleFanSet				IndexedTriangleFanSet
IndexedTriangleSet		IndexedTriangleSet	IndexedTriangleSet				IndexedTriangleSet
IndexedTriangleStripSet		IndexedTriangleStripSet	IndexedTriangleStripSet				IndexedTriangleStripSet
Inline		Inline	Inline				Inline
IntegerSequencer		IntegerSequencer	IntegerSequencer				IntegerSequencer
IntegerTrigger		IntegerTrigger	IntegerTrigger				IntegerTrigger
IS		IS	IS				IS
IsoSurfaceVolumeData		IsoSurfaceVolumeData	IsoSurfaceVolumeData				IsoSurfaceVolumeData
KeySensor		KeySensor	KeySensor				KeySensor
Layer		Layer	Layer				Layer
LayerSet		LayerSet	LayerSet				LayerSet
Layout		Layout	Layout				Layout
LayoutGroup		LayoutGroup	LayoutGroup				LayoutGroup
LayoutLayer		LayoutLayer	LayoutLayer				LayoutLayer
LinePickSensor		LinePickSensor	LinePickSensor				LinePickSensor
LineProperties		LineProperties	LineProperties				LineProperties
LineSet		LineSet	LineSet				LineSet

ListenerPointSource		ListenerPointSource	ListenerPointSource				ListenerPointSource
LoadSensor		LoadSensor	LoadSensor				LoadSensor
LocalFog		LocalFog	LocalFog				LocalFog
LOD		LOD	LOD				LOD
Material		Material	Material				Material
Matrix3VertexAttribute		Matrix3VertexAttribute	Matrix3VertexAttribute				Matrix3VertexAttribute
Matrix4VertexAttribute		Matrix4VertexAttribute	Matrix4VertexAttribute				Matrix4VertexAttribute
meta		meta	meta				meta
MetadataBoolean		MetadataBoolean	MetadataBoolean				MetadataBoolean
MetadataDouble		MetadataDouble	MetadataDouble				MetadataDouble
MetadataFloat		MetadataFloat	MetadataFloat				MetadataFloat
MetadataInteger		MetadataInteger	MetadataInteger				MetadataInteger
MetadataSet		MetadataSet	MetadataSet				MetadataSet
MetadataString		MetadataString	MetadataString				MetadataString
MicrophoneSource		MicrophoneSource	MicrophoneSource				MicrophoneSource
MotorJoint		MotorJoint	MotorJoint				MotorJoint
MovieTexture		MovieTexture	MovieTexture				MovieTexture
MultiTexture		MultiTexture	MultiTexture				MultiTexture
MultiTextureCoordinate		MultiTextureCoordinate	MultiTextureCoordinate				MultiTextureCoordinate
MultiTextureTransform		MultiTextureTransform	MultiTextureTransform				MultiTextureTransform
NavigationInfo		NavigationInfo	NavigationInfo				NavigationInfo
Normal		Normal	Normal				Normal
NormalInterpolator		NormalInterpolator	NormalInterpolator				NormalInterpolator
NurbsCurve		NurbsCurve	NurbsCurve				NurbsCurve
NurbsCurve2D		NurbsCurve2D	NurbsCurve2D				NurbsCurve2D
NurbsOrientationInterpolator		NurbsOrientationInterpolator	NurbsOrientationInterpolator				NurbsOrientationInterpolator
NurbsPatchSurface		NurbsPatchSurface	NurbsPatchSurface				NurbsPatchSurface
NurbsPositionInterpolator		NurbsPositionInterpolator	NurbsPositionInterpolator				NurbsPositionInterpolator
NurbsSet		NurbsSet	NurbsSet				NurbsSet
NurbsSurfaceInterpolator		NurbsSurfaceInterpolator	NurbsSurfaceInterpolator				NurbsSurfaceInterpolator
NurbsSweptSurface		NurbsSweptSurface	NurbsSweptSurface				NurbsSweptSurface
NurbsSwungSurface		NurbsSwungSurface	NurbsSwungSurface				NurbsSwungSurface
NurbsTextureCoordinate		NurbsTextureCoordinate	NurbsTextureCoordinate				NurbsTextureCoordinate
NurbsTrimmedSurface		NurbsTrimmedSurface	NurbsTrimmedSurface				NurbsTrimmedSurface
OpacityMapVolumeStyle		OpacityMapVolumeStyle	OpacityMapVolumeStyle				OpacityMapVolumeStyle
OrientationChaser		OrientationChaser	OrientationChaser				OrientationChaser
OrientationDamper		OrientationDamper	OrientationDamper				OrientationDamper
OrientationInterpolator		OrientationInterpolator	OrientationInterpolator				OrientationInterpolator
OrthoViewpoint		OrthoViewpoint	OrthoViewpoint				OrthoViewpoint
OscillatorSource		OscillatorSource	OscillatorSource				OscillatorSource
PackagedShader		PackagedShader	PackagedShader				PackagedShader
ParticleSystem		ParticleSystem	ParticleSystem				ParticleSystem
PeriodicWave		PeriodicWave	PeriodicWave				PeriodicWave
PhysicalMaterial		PhysicalMaterial	PhysicalMaterial				PhysicalMaterial
PickableGroup		PickableGroup	PickableGroup				PickableGroup
PixelTexture		PixelTexture	PixelTexture				PixelTexture
PixelTexture3D		PixelTexture3D	PixelTexture3D				PixelTexture3D
PlaneSensor		PlaneSensor	PlaneSensor				PlaneSensor
PointEmitter		PointEmitter	PointEmitter				PointEmitter
PointLight		PointLight	PointLight				PointLight
PointPickSensor		PointPickSensor	PointPickSensor				PointPickSensor
PointProperties		PointProperties	PointProperties				PointProperties
PointSet		PointSet	PointSet				PointSet
Polyline2D		Polyline2D	Polyline2D				Polyline2D
PolylineEmitter		PolylineEmitter	PolylineEmitter				PolylineEmitter
Polypoint2D		Polypoint2D	Polypoint2D				Polypoint2D
PositionChaser		PositionChaser	PositionChaser				PositionChaser
PositionChaser2D		PositionChaser2D	PositionChaser2D				PositionChaser2D
PositionDamper		PositionDamper	PositionDamper				PositionDamper
PositionDamper2D		PositionDamper2D	PositionDamper2D				PositionDamper2D
PositionInterpolator		PositionInterpolator	PositionInterpolator				PositionInterpolator
PositionInterpolator2D		PositionInterpolator2D	PositionInterpolator2D				PositionInterpolator2D
PrimitivePickSensor		PrimitivePickSensor	PrimitivePickSensor				PrimitivePickSensor
ProgramShader		ProgramShader	ProgramShader				ProgramShader
ProjectionVolumeStyle		ProjectionVolumeStyle	ProjectionVolumeStyle				ProjectionVolumeStyle
-		ProtoBody	ProtoBody				ProtoBody
ProtoDeclare		ProtoDeclare	ProtoDeclare				ProtoDeclare

ProtoInstance		ProtoInstance	ProtoInstance				ProtoInstance
-		ProtoInterface	ProtoInterface				ProtoInterface
ProximitySensor		ProximitySensor	ProximitySensor				ProximitySensor
QuadSet		QuadSet	QuadSet				QuadSet
ReceiverPdu		ReceiverPdu	ReceiverPdu				ReceiverPdu
Rectangle2D		Rectangle2D	Rectangle2D				Rectangle2D
RigidBody		RigidBody	RigidBody				RigidBody
RigidBodyCollection		RigidBodyCollection	RigidBodyCollection				RigidBodyCollection
ROUTE		ROUTE	ROUTE				ROUTE
ScalarChaser		ScalarChaser	ScalarChaser				ScalarChaser
ScalarDamper		ScalarDamper	ScalarDamper				ScalarDamper
ScalarInterpolator		ScalarInterpolator	ScalarInterpolator				ScalarInterpolator
-		Scene	Scene				Scene
ScreenFontStyle		ScreenFontStyle	ScreenFontStyle				ScreenFontStyle
ScreenGroup		ScreenGroup	ScreenGroup				ScreenGroup
Script		Script	Script				Script
SegmentedVolumeData		SegmentedVolumeData	SegmentedVolumeData				SegmentedVolumeData
ShadedVolumeStyle		ShadedVolumeStyle	ShadedVolumeStyle				ShadedVolumeStyle
ShaderPart		ShaderPart	ShaderPart				ShaderPart
ShaderProgram		ShaderProgram	ShaderProgram				ShaderProgram
Shape		Shape	Shape				Shape
SignalPdu		SignalPdu	SignalPdu				SignalPdu
SilhouetteEnhancementVolumeStyle		SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle				SilhouetteEnhancementVolumeStyle
SingleAxisHingeJoint		SingleAxisHingeJoint	SingleAxisHingeJoint				SingleAxisHingeJoint
SliderJoint		SliderJoint	SliderJoint				SliderJoint
Sound		Sound	Sound				Sound
SpatialSound		SpatialSound	SpatialSound				SpatialSound
Sphere		Sphere	Sphere				Sphere
SphereSensor		SphereSensor	SphereSensor				SphereSensor
SplinePositionInterpolator		SplinePositionInterpolator	SplinePositionInterpolator				SplinePositionInterpolator
SplinePositionInterpolator2D		SplinePositionInterpolator2D	SplinePositionInterpolator2D				SplinePositionInterpolator2D
SplineScalarInterpolator		SplineScalarInterpolator	SplineScalarInterpolator				SplineScalarInterpolator
SpotLight		SpotLight	SpotLight				SpotLight
SquadOrientationInterpolator		SquadOrientationInterpolator	SquadOrientationInterpolator				SquadOrientationInterpolator
StaticGroup		StaticGroup	StaticGroup				StaticGroup
StreamAudioDestination		StreamAudioDestination	StreamAudioDestination				StreamAudioDestination
StreamAudioSource		StreamAudioSource	StreamAudioSource				StreamAudioSource
StringSensor		StringSensor	StringSensor				StringSensor
SurfaceEmitter		SurfaceEmitter	SurfaceEmitter				SurfaceEmitter
Switch		Switch	Switch				Switch
TexCoordChaser2D		TexCoordChaser2D	TexCoordChaser2D				TexCoordChaser2D
TexCoordDamper2D		TexCoordDamper2D	TexCoordDamper2D				TexCoordDamper2D
Text		Text	Text				Text
TextureBackground		TextureBackground	TextureBackground				TextureBackground
TextureCoordinate		TextureCoordinate	TextureCoordinate				TextureCoordinate
TextureCoordinate3D		TextureCoordinate3D	TextureCoordinate3D				TextureCoordinate3D
TextureCoordinate4D		TextureCoordinate4D	TextureCoordinate4D				TextureCoordinate4D
TextureCoordinateGenerator		TextureCoordinateGenerator	TextureCoordinateGenerator				TextureCoordinateGenerator
TextureProjector		TextureProjector	TextureProjector				TextureProjector
TextureProjectorParallel		TextureProjectorParallel	TextureProjectorParallel				TextureProjectorParallel
TextureProperties		TextureProperties	TextureProperties				TextureProperties
TextureTransform		TextureTransform	TextureTransform				TextureTransform
TextureTransform3D		TextureTransform3D	TextureTransform3D				TextureTransform3D
TextureTransformMatrix3D		TextureTransformMatrix3D	TextureTransformMatrix3D				TextureTransformMatrix3D
TimeSensor		TimeSensor	TimeSensor				TimeSensor
TimeTrigger		TimeTrigger	TimeTrigger				TimeTrigger
ToneMappedVolumeStyle		ToneMappedVolumeStyle	ToneMappedVolumeStyle				ToneMappedVolumeStyle
TouchSensor		TouchSensor	TouchSensor				TouchSensor
Transform		Transform	Transform				Transform
TransformSensor		TransformSensor	TransformSensor				TransformSensor
TransmitterPdu		TransmitterPdu	TransmitterPdu				TransmitterPdu
TriangleFanSet		TriangleFanSet	TriangleFanSet				TriangleFanSet
TriangleSet		TriangleSet	TriangleSet				TriangleSet
TriangleSet2D		TriangleSet2D	TriangleSet2D				TriangleSet2D
TriangleStripSet		TriangleStripSet	TriangleStripSet				TriangleStripSet
TwoSidedMaterial		TwoSidedMaterial	TwoSidedMaterial				TwoSidedMaterial
UNIT		UNIT	UNIT				UNIT

UniversalJoint		UniversalJoint	UniversalJoint				UniversalJoint
UnlitMaterial		UnlitMaterial	UnlitMaterial				UnlitMaterial
Viewpoint		Viewpoint	Viewpoint				Viewpoint
ViewpointGroup		ViewpointGroup	ViewpointGroup				ViewpointGroup
Viewport		Viewport	Viewport				Viewport
VisibilitySensor		VisibilitySensor	VisibilitySensor				VisibilitySensor
VolumeData		VolumeData	VolumeData				VolumeData
VolumeEmitter		VolumeEmitter	VolumeEmitter				VolumeEmitter
VolumePickSensor		VolumePickSensor	VolumePickSensor				VolumePickSensor
WindPhysicsModel		WindPhysicsModel	WindPhysicsModel				WindPhysicsModel
WorldInfo		WorldInfo	WorldInfo				WorldInfo
X3D		X3D	X3D				X3D

Supported nodes and statements:	0%	100%	100%	0%	0%	0%	100%
276	0	276	276	0	0	0	276
Unimplemented nodes and statements:							
0	276	0	0	276	276	276	0

X3D v4.0 Architecture Draft Specification

X3D Model Validation Node and Statement Support	X3D version 4.0		updated 16 January 2023	https://www.web3d.org/specifications/X3dNodeInventoryComparison.xlsx https://www.web3d.org/specifications/X3dNodeInventoryComparison.pdf			
X3D Abstract Specification Node Index	*X3D XML Schema validation*	*X3D XML DOCTYPE DTD validation*	*X3D JSON Schema*	*X3D Tooltips*	*X3D Schematron validation*	*VRML97 Specification*	*X3dToVrml97.xslt*
	(with basis for X3DUOM construction)					(Grey background: unsupported or forward compatible, .wrl VRML97)	
AcousticProperties	AcousticProperties	AcousticProperties	TODO update X3D JSON draft schema once IETF RFC standard, applications, and command-line validation tools are finally available. TODO add link.	AcousticProperties	AcousticProperties		
Analyser	Analyser	Analyser		Analyser	Analyser		
Anchor	Anchor	Anchor		Anchor	Anchor	Anchor	Anchor
Appearance	Appearance	Appearance		Appearance	Appearance	Appearance	Appearance
Arc2D	Arc2D	Arc2D		Arc2D	Arc2D	(Prototype available)	Arc2D
ArcClose2D	ArcClose2D	ArcClose2D		ArcClose2D	ArcClose2D	(Prototype available)	ArcClose2D
AudioClip	AudioClip	AudioClip		AudioClip	AudioClip	AudioClip	AudioClip
AudioDestination	AudioDestination	AudioDestination		AudioDestination			
Background	Background	Background		Background	Background	Background	Background
BallJoint	BallJoint	BallJoint		BallJoint	BallJoint		
BiquadFilter	BiquadFilter	BiquadFilter		BiquadFilter			
Billboard	Billboard	Billboard		Billboard	Billboard	Billboard	Billboard
BlendedVolumeStyle	BlendedVolumeStyle	BlendedVolumeStyle		BlendedVolumeStyle	BlendedVolumeStyle		
BooleanFilter	BooleanFilter	BooleanFilter		BooleanFilter	BooleanFilter	(Prototype available)	BooleanFilter
BooleanSequencer	BooleanSequencer	BooleanSequencer		BooleanSequencer	BooleanSequencer	(Prototype available)	BooleanSequencer
BooleanToggle	BooleanToggle	BooleanToggle		BooleanToggle	BooleanToggle	(Prototype available)	BooleanToggle
BooleanTrigger	BooleanTrigger	BooleanTrigger		BooleanTrigger	BooleanTrigger	(Prototype available)	BooleanTrigger
BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle		BoundaryEnhancementVolumeStyle	BoundaryEnhancementVolumeStyle		
BoundedPhysicsModel	BoundedPhysicsModel	BoundedPhysicsModel		BoundedPhysicsModel			
Box	Box	Box		Box	Box	Box	Box
BufferAudioSource	BufferAudioSource	BufferAudioSource		BufferAudioSource			
CADAssembly	CADAssembly	CADAssembly		CADAssembly	CADAssembly	(Prototype available)	CADAssembly
CADFace	CADFace	CADFace		CADFace	CADFace	(Prototype available)	CADFace
CADLayer	CADLayer	CADLayer		CADLayer	CADLayer	(Prototype available)	CADLayer
CADPart	CADPart	CADPart		CADPart	CADPart	(Prototype available)	CADPart
CartoonVolumeStyle	CartoonVolumeStyle	CartoonVolumeStyle		CartoonVolumeStyle	CartoonVolumeStyle		
ChannelMerger	ChannelMerger	ChannelMerger		ChannelMerger			
ChannelSelector	ChannelSelector	ChannelSelector		ChannelSelector			
ChannelSplitter	ChannelSplitter	ChannelSplitter		ChannelSplitter			
Circle2D	Circle2D	Circle2D		Circle2D	Circle2D	(Prototype available)	Circle2D
ClipPlane	ClipPlane	ClipPlane		ClipPlane	ClipPlane		
CollidableOffset	CollidableOffset	CollidableOffset		CollidableOffset	CollidableOffset		
CollidableShape	CollidableShape	CollidableShape		CollidableShape	CollidableShape		
Collision	Collision	Collision		Collision	Collision	Collision	Collision
CollisionCollection	CollisionCollection	CollisionCollection		CollisionCollection	CollisionCollection		
CollisionSensor	CollisionSensor	CollisionSensor		CollisionSensor	CollisionSensor		
CollisionSpace	CollisionSpace	CollisionSpace		CollisionSpace	CollisionSpace		
Color	Color	Color		Color	Color	Color	Color
ColorChaser	ColorChaser	ColorChaser		ColorChaser	ColorChaser		
ColorDamper	ColorDamper	ColorDamper		ColorDamper	ColorDamper		
ColorInterpolator	ColorInterpolator	ColorInterpolator		ColorInterpolator	ColorInterpolator	ColorInterpolator	ColorInterpolator
ColorRGBA	ColorRGBA	ColorRGBA		ColorRGBA	ColorRGBA	(Prototype available)	ColorRGBA
component	component	component		component	component		
ComposedCubeMapTexture	ComposedCubeMapTexture	ComposedCubeMapTexture		ComposedCubeMapTexture	ComposedCubeMapTexture		
ComposedShader	ComposedShader	ComposedShader		ComposedShader	ComposedShader		
ComposedTexture3D	ComposedTexture3D	ComposedTexture3D		ComposedTexture3D	ComposedTexture3D		
ComposedVolumeStyle	ComposedVolumeStyle	ComposedVolumeStyle		ComposedVolumeStyle	ComposedVolumeStyle		
Cone	Cone	Cone		Cone	Cone	Cone	Cone
ConeEmitter	ConeEmitter	ConeEmitter		ConeEmitter			
connect	connect	connect		connect	connect		
Contact	Contact	Contact		Contact	Contact		
Contour2D	Contour2D	Contour2D		Contour2D		(Prototype available)	Contour2D
ContourPolyline2D	ContourPolyline2D	ContourPolyline2D		ContourPolyline2D	ContourPolyline2D	(Prototype available)	ContourPolyline2D
Convolver	Convolver	Convolver		Convolver			
Coordinate	Coordinate	Coordinate		Coordinate	Coordinate	Coordinate	Coordinate
CoordinateChaser	CoordinateChaser	CoordinateChaser		CoordinateChaser	CoordinateChaser		
CoordinateDamper	CoordinateDamper	CoordinateDamper		CoordinateDamper	CoordinateDamper		
CoordinateDouble	CoordinateDouble	CoordinateDouble		CoordinateDouble	CoordinateDouble	(Prototype available)	CoordinateDouble
CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator		CoordinateInterpolator	CoordinateInterpolator	CoordinateInterpolator	
CoordinateInterpolator2D	CoordinateInterpolator2D	CoordinateInterpolator2D		CoordinateInterpolator2D	CoordinateInterpolator2D	(Prototype available)	CoordinateInterpolator2D
Cylinder	Cylinder	Cylinder		Cylinder	Cylinder	Cylinder	Cylinder
CylinderSensor	CylinderSensor	CylinderSensor		CylinderSensor	CylinderSensor	CylinderSensor	CylinderSensor
Delay	Delay	Delay		Delay			
DirectionalLight	DirectionalLight	DirectionalLight		DirectionalLight	DirectionalLight	DirectionalLight	DirectionalLight
DISEntityManager	DISEntityManager	DISEntityManager		DISEntityManager	DISEntityManager		
DISEntityTypeMapping	DISEntityTypeMapping	DISEntityTypeMapping		DISEntityTypeMapping	DISEntityTypeMapping		
Disk2D	Disk2D	Disk2D		Disk2D	Disk2D	(Prototype available)	Disk2D

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X3D Abstract Specification Node Index	*X3D XML Schema validation*	*X3D XML DOCTYPE DTD validation*	*X3D JSON Schema*	*X3D Tooltips*	*X3D Schematron validation*	*VRML97 Specification*	*X3dToVrml97.xslt*
	(with basis for X3DUOM construction)					(Grey background: unsupported or forward compatible, .wrl VRML97)	
DoubleAxisHingeJoint	DoubleAxisHingeJoint	DoubleAxisHingeJoint		DoubleAxisHingeJoint	DoubleAxisHingeJoint		
DynamicsCompressor	DynamicsCompressor	DynamicsCompressor		DynamicsCompressor			
EaseInEaseOut	EaseInEaseOut	EaseInEaseOut		EaseInEaseOut	EaseInEaseOut		
EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle		EdgeEnhancementVolumeStyle	EdgeEnhancementVolumeStyle		
ElevationGrid	ElevationGrid	ElevationGrid		ElevationGrid	ElevationGrid	ElevationGrid	ElevationGrid
EspduTransform	EspduTransform	EspduTransform		EspduTransform	EspduTransform	(Java Prototype available)	EspduTransform
ExplosionEmitter	ExplosionEmitter	ExplosionEmitter		ExplosionEmitter			
EXPORT	EXPORT	EXPORT		EXPORT	EXPORT		
ExternProtoDeclare	ExternProtoDeclare	ExternProtoDeclare		ExternProtoDeclare	ExternProtoDeclare		
Extrusion	Extrusion	Extrusion		Extrusion	Extrusion	Extrusion	Extrusion
field	field	field		field	field		
fieldValue	fieldValue	fieldValue		fieldValue	fieldValue		
FillProperties	FillProperties	FillProperties		FillProperties	FillProperties		
FloatVertexAttribute	FloatVertexAttribute	FloatVertexAttribute		FloatVertexAttribute	FloatVertexAttribute		
Fog	Fog	Fog		Fog	Fog	Fog	Fog
FogCoordinate	FogCoordinate	FogCoordinate		FogCoordinate	FogCoordinate		
FontStyle	FontStyle	FontStyle		FontStyle	FontStyle	FontStyle	FontStyle
ForcePhysicsModel	ForcePhysicsModel	ForcePhysicsModel		ForcePhysicsModel			
Gain	Gain	Gain		Gain			
GeneratedCubeMapTexture	GeneratedCubeMapTexture	GeneratedCubeMapTexture		GeneratedCubeMapTexture	GeneratedCubeMapTexture		
GeoCoordinate	GeoCoordinate	GeoCoordinate		GeoCoordinate	GeoCoordinate	(Prototype available)	GeoCoordinate
GeoElevationGrid	GeoElevationGrid	GeoElevationGrid		GeoElevationGrid	GeoElevationGrid	(Prototype available)	GeoElevationGrid
GeoLocation	GeoLocation	GeoLocation		GeoLocation	GeoLocation	(Prototype available)	GeoLocation
GeoLOD	GeoLOD	GeoLOD		GeoLOD	GeoLOD	(Prototype available)	GeoLOD
GeoMetadata	GeoMetadata	GeoMetadata		GeoMetadata	GeoMetadata	(Prototype available)	GeoMetadata
GeoOrigin	GeoOrigin	GeoOrigin		GeoOrigin	GeoOrigin	(Prototype available)	GeoOrigin
GeoPositionInterpolator	GeoPositionInterpolator	GeoPositionInterpolator		GeoPositionInterpolator	GeoPositionInterpolator	(Prototype available)	GeoPositionInterpolator
GeoProximitySensor	GeoProximitySensor	GeoProximitySensor		GeoProximitySensor	GeoProximitySensor		
GeoTouchSensor	GeoTouchSensor	GeoTouchSensor		GeoTouchSensor	GeoTouchSensor	(Prototype available)	GeoTouchSensor
GeoTransform	GeoTransform	GeoTransform		GeoTransform	GeoTransform		
GeoViewpoint	GeoViewpoint	GeoViewpoint		GeoViewpoint	GeoViewpoint	(Prototype available)	GeoViewpoint
Group	Group	Group		Group	Group	Group	Group
HAnimDisplacer	HAnimDisplacer	HAnimDisplacer		HAnimDisplacer	HAnimDisplacer	(Prototype available)	HAnimDisplacer
HAnimHumanoid	HAnimHumanoid	HAnimHumanoid		HAnimHumanoid	HAnimHumanoid	(Prototype available)	HAnimHumanoid
HAnimJoint	HAnimJoint	HAnimJoint		HAnimJoint	HAnimJoint	(Prototype available)	HAnimJoint
HAnimMotion	HAnimMotion	HAnimMotion		HAnimMotion	HAnimMotion	(perhaps prototype	is possible?)
HAnimSegment	HAnimSegment	HAnimSegment		HAnimSegment	HAnimSegment	(Prototype available)	HAnimSegment
HAnimSite	HAnimSite	HAnimSite		HAnimSite	HAnimSite	(Prototype available)	HAnimSite
head	head	head		head	head		
ImageCubeMapTexture	ImageCubeMapTexture	ImageCubeMapTexture		ImageCubeMapTexture			
ImageTexture	ImageTexture	ImageTexture		ImageTexture	ImageTexture	ImageTexture	ImageTexture
ImageTexture3D	ImageTexture3D	ImageTexture3D		ImageTexture3D			
IMPORT	IMPORT	IMPORT		IMPORT	IMPORT		
IndexedFaceSet	IndexedFaceSet	IndexedFaceSet		IndexedFaceSet	IndexedFaceSet	IndexedFaceSet	IndexedFaceSet
IndexedLineSet	IndexedLineSet	IndexedLineSet		IndexedLineSet	IndexedLineSet	IndexedLineSet	IndexedLineSet
IndexedQuadSet	IndexedQuadSet	IndexedQuadSet		IndexedQuadSet	IndexedQuadSet	(Prototype available)	IndexedQuadSet
IndexedTriangleFanSet	IndexedTriangleFanSet	IndexedTriangleFanSet		IndexedTriangleFanSet	IndexedTriangleFanSet	(Prototype available)	IndexedTriangleFanSet
IndexedTriangleSet	IndexedTriangleSet	IndexedTriangleSet		IndexedTriangleSet	IndexedTriangleSet	(Prototype available)	IndexedTriangleSet
IndexedTriangleStripSet	IndexedTriangleStripSet	IndexedTriangleStripSet		IndexedTriangleStripSet	IndexedTriangleStripSet	(Prototype available)	IndexedTriangleStripSet
Inline	Inline	Inline		Inline	Inline	Inline	Inline
IntegerSequencer	IntegerSequencer	IntegerSequencer		IntegerSequencer	IntegerSequencer	(Prototype available)	IntegerSequencer
IntegerTrigger	IntegerTrigger	IntegerTrigger		IntegerTrigger	IntegerTrigger	(Prototype available)	IntegerTrigger
IS	IS	IS		IS	IS		
IsoSurfaceVolumeData	IsoSurfaceVolumeData	IsoSurfaceVolumeData		IsoSurfaceVolumeData	IsoSurfaceVolumeData		
KeySensor	KeySensor	KeySensor		KeySensor			
Layer	Layer	Layer		Layer			
LayerSet	LayerSet	LayerSet		LayerSet			
Layout	Layout	Layout		Layout			
LayoutGroup	LayoutGroup	LayoutGroup		LayoutGroup			
LayoutLayer	LayoutLayer	LayoutLayer		LayoutLayer			
LinePickSensor	LinePickSensor	LinePickSensor		LinePickSensor			
LineProperties	LineProperties	LineProperties		LineProperties	LineProperties		
LineSet	LineSet	LineSet		LineSet	LineSet	(Prototype available)	LineSet
ListenerPointSource	ListenerPointSource	ListenerPointSource		ListenerPointSource			
LoadSensor	LoadSensor	LoadSensor		LoadSensor	LoadSensor	(Prototype available)	LoadSensor
LocalFog	LocalFog	LocalFog		LocalFog	LocalFog		
LOD	LOD	LOD		LOD	LOD	LOD	LOD

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	(with basis for X3DUOM construction)					(Grey background: unsupported or forward compatible, .wrl VRML97)	
Material	Material	Material		Material	Material	Material	Material
Matrix3VertexAttribute	Matrix3VertexAttribute	Matrix3VertexAttribute		Matrix3VertexAttribute	Matrix3VertexAttribute		
Matrix4VertexAttribute	Matrix4VertexAttribute	Matrix4VertexAttribute		Matrix4VertexAttribute	Matrix4VertexAttribute		
meta	meta	meta		meta	meta		
MetadataBoolean	MetadataBoolean	MetadataBoolean		MetadataBoolean	MetadataBoolean	(Prototype available)	MetadataBoolean
MetadataDouble	MetadataDouble	MetadataDouble		MetadataDouble	MetadataDouble	(Prototype available)	MetadataDouble
MetadataFloat	MetadataFloat	MetadataFloat		MetadataFloat	MetadataFloat	(Prototype available)	MetadataFloat
MetadataInteger	MetadataInteger	MetadataInteger		MetadataInteger	MetadataInteger	(Prototype available)	MetadataInteger
MetadataSet	MetadataSet	MetadataSet		MetadataSet	MetadataSet	(Prototype available)	MetadataSet
MetadataString	MetadataString	MetadataString		MetadataString	MetadataString	(Prototype available)	MetadataString
MicrophoneSource	MicrophoneSource	MicrophoneSource		MicrophoneSource			
MotorJoint	MotorJoint	MotorJoint		MotorJoint	MotorJoint		
MovieTexture	MovieTexture	MovieTexture		MovieTexture	MovieTexture	MovieTexture	
MultiTexture	MultiTexture	MultiTexture		MultiTexture	MultiTexture		
MultiTextureCoordinate	MultiTextureCoordinate	MultiTextureCoordinate		MultiTextureCoordinate	MultiTextureCoordinate		
MultiTextureTransform	MultiTextureTransform	MultiTextureTransform		MultiTextureTransform	MultiTextureTransform		
NavigationInfo	NavigationInfo	NavigationInfo		NavigationInfo	NavigationInfo	NavigationInfo	NavigationInfo
Normal	Normal	Normal		Normal	Normal	Normal	Normal
NormalInterpolator	NormalInterpolator	NormalInterpolator		NormalInterpolator	NormalInterpolator	NormalInterpolator	NormalInterpolator
NurbsCurve	NurbsCurve	NurbsCurve		NurbsCurve	NurbsCurve	(Java Prototype available)	NurbsCurve
NurbsCurve2D	NurbsCurve2D	NurbsCurve2D		NurbsCurve2D		(Java Prototype available)	NurbsCurve2D
NurbsOrientationInterpolator	NurbsOrientationInterpolator	NurbsOrientationInterpolator		NurbsOrientationInterpolator		(Java Prototype available)	NurbsOrientationInterpolator
NurbsPatchSurface	NurbsPatchSurface	NurbsPatchSurface		NurbsPatchSurface	NurbsPatchSurface	(Java Prototype available)	NurbsPatchSurface
NurbsPositionInterpolator	NurbsPositionInterpolator	NurbsPositionInterpolator		NurbsPositionInterpolator		(Java Prototype available)	NurbsPositionInterpolator
NurbsSet	NurbsSet	NurbsSet		NurbsSet		(Java Prototype available)	NurbsSet
NurbsSurfaceInterpolator	NurbsSurfaceInterpolator	NurbsSurfaceInterpolator		NurbsSurfaceInterpolator		(Java Prototype available)	NurbsSurfaceInterpolator
NurbsSweptSurface	NurbsSweptSurface	NurbsSweptSurface		NurbsSweptSurface		(Java Prototype available)	NurbsSweptSurface
NurbsSwungSurface	NurbsSwungSurface	NurbsSwungSurface		NurbsSwungSurface		(Java Prototype available)	NurbsSwungSurface
NurbsTextureCoordinate	NurbsTextureCoordinate	NurbsTextureCoordinate		NurbsTextureCoordinate		(Java Prototype available)	NurbsTextureCoordinate
NurbsTrimmedSurface	NurbsTrimmedSurface	NurbsTrimmedSurface		NurbsTrimmedSurface	NurbsTrimmedSurface	(Java Prototype available)	NurbsTrimmedSurface
OpacityMapVolumeStyle	OpacityMapVolumeStyle	OpacityMapVolumeStyle		OpacityMapVolumeStyle	OpacityMapVolumeStyle		
OrientationChaser	OrientationChaser	OrientationChaser		OrientationChaser			
OrientationDamper	OrientationDamper	OrientationDamper		OrientationDamper	OrientationDamper		
OrientationInterpolator	OrientationInterpolator	OrientationInterpolator		OrientationInterpolator		OrientationInterpolator	OrientationInterpolator
OrthoViewpoint	OrthoViewpoint	OrthoViewpoint		OrthoViewpoint	OrthoViewpoint		
OscillatorSource	OscillatorSource	OscillatorSource		OscillatorSource			
PackagedShader	PackagedShader	PackagedShader		PackagedShader			
ParticleSystem	ParticleSystem	ParticleSystem		ParticleSystem	ParticleSystem		
PeriodicWave	PeriodicWave	PeriodicWave		PeriodicWave			
PeriodicWave	PeriodicWave	PeriodicWave		PeriodicWave			
PickableGroup	PickableGroup	PickableGroup		PickableGroup			
PixelTexture	PixelTexture	PixelTexture		PixelTexture	PixelTexture	PixelTexture	PixelTexture
PixelTexture3D	PixelTexture3D	PixelTexture3D		PixelTexture3D			
PlaneSensor	PlaneSensor	PlaneSensor		PlaneSensor	PlaneSensor	PlaneSensor	PlaneSensor
PointEmitter	PointEmitter	PointEmitter		PointEmitter			
PointLight	PointLight	PointLight		PointLight	PointLight	PointLight	PointLight
PointPickSensor	PointPickSensor	PointPickSensor		PointPickSensor			
PointProperties	PointProperties	PointProperties		PointProperties	PointProperties		
PointSet	PointSet	PointSet		PointSet	PointSet	PointSet	PointSet
Polyline2D	Polyline2D	Polyline2D		Polyline2D		(Prototype available)	Polyline2D
PolylineEmitter	PolylineEmitter	PolylineEmitter		PolylineEmitter			
Polypoint2D	Polypoint2D	Polypoint2D		Polypoint2D		(Prototype available)	Polypoint2D
PositionChaser	PositionChaser	PositionChaser		PositionChaser			
PositionChaser2D	PositionChaser2D	PositionChaser2D		PositionChaser2D			
PositionDamper	PositionDamper	PositionDamper		PositionDamper			
PositionDamper2D	PositionDamper2D	PositionDamper2D		PositionDamper2D			
PositionInterpolator	PositionInterpolator	PositionInterpolator		PositionInterpolator	PositionInterpolator	PositionInterpolator	PositionInterpolator
PositionInterpolator2D	PositionInterpolator2D	PositionInterpolator2D		PositionInterpolator2D	PositionInterpolator2D	(Prototype available)	PositionInterpolator2D
PrimitivePickSensor	PrimitivePicker	PrimitivePickSensor		PrimitivePickSensor			
ProgramShader	ProgramShader	ProgramShader		ProgramShader	ProgramShader		
ProjectionVolumeStyle	ProjectionVolumeStyle	ProjectionVolumeStyle		ProjectionVolumeStyle	ProjectionVolumeStyle		
-	ProtoBody	ProtoBody		ProtoBody	ProtoBody		
ProtoDeclare	ProtoDeclare	ProtoDeclare		ProtoDeclare	ProtoDeclare		
ProtoInstance	ProtoInstance	ProtoInstance		ProtoInstance	ProtoInstance		
-	ProtoInterface	ProtoInterface		ProtoInterface	ProtoInterface		
ProximitySensor	ProximitySensor	ProximitySensor		ProximitySensor	ProximitySensor	ProximitySensor	ProximitySensor
QuadSet	QuadSet	QuadSet		QuadSet	QuadSet	(Prototype available)	QuadSet

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ReceiverPdu	ReceiverPdu	ReceiverPdu		ReceiverPdu	ReceiverPdu	(Java Prototype available)	ReceiverPdu
Rectangle2D	Rectangle2D	Rectangle2D		Rectangle2D		(Prototype available)	Rectangle2D
RigidBody	RigidBody	RigidBody		RigidBody	RigidBody		
RigidBodyCollection	RigidBodyCollection	RigidBodyCollection		RigidBodyCollection	RigidBodyCollection		
ROUTE	ROUTE	ROUTE		ROUTE	ROUTE		
ScalarChaser	ScalarChaser	ScalarChaser		ScalarChaser			
ScalarDamper	ScalarDamper	ScalarDamper		ScalarDamper			
ScalarInterpolator	ScalarInterpolator	ScalarInterpolator		ScalarInterpolator	ScalarInterpolator	ScalarInterpolator	ScalarInterpolator
-	Scene	Scene		Scene	Scene		
ScreenFontStyle	ScreenFontStyle	ScreenFontStyle		ScreenFontStyle			
ScreenGroup	ScreenGroup	ScreenGroup		ScreenGroup			
Script	Script	Script		Script	Script	Script	Script
SegmentedVolumeData	SegmentedVolumeData	SegmentedVolumeData		SegmentedVolumeData	SegmentedVolumeData		
ShadedVolumeStyle	ShadedVolumeStyle	ShadedVolumeStyle		ShadedVolumeStyle	ShadedVolumeStyle		
ShaderPart	ShaderPart	ShaderPart		ShaderPart	ShaderPart		
ShaderProgram	ShaderProgram	ShaderProgram		ShaderProgram	ShaderProgram		
Shape	Shape	Shape		Shape	Shape	Shape	Shape
SignalPdu	SignalPdu	SignalPdu		SignalPdu	SignalPdu	(Java Prototype available)	SignalPdu
SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle		SilhouetteEnhancementVolumeStyle	SilhouetteEnhancementVolumeStyle		
SingleAxisHingeJoint	SingleAxisHingeJoint	SingleAxisHingeJoint		SingleAxisHingeJoint	SingleAxisHingeJoint		
SliderJoint	SliderJoint	SliderJoint		SliderJoint	SliderJoint		
Sound	Sound	Sound		Sound	Sound	Sound	Sound
SpatialSound	SpatialSound	SpatialSound		SpatialSound			
Sphere	Sphere	Sphere		Sphere	Sphere	Sphere	Sphere
SphereSensor	SphereSensor	SphereSensor		SphereSensor	SphereSensor	SphereSensor	SphereSensor
SplinePositionInterpolator	SplinePositionInterpolator	SplinePositionInterpolator		SplinePositionInterpolator			
SplinePositionInterpolator2D	SplinePositionInterpolator2D	SplinePositionInterpolator2D		SplinePositionInterpolator2D			
SplineScalarInterpolator	SplineScalarInterpolator	SplineScalarInterpolator		SplineScalarInterpolator			
SpotLight	SpotLight	SpotLight		SpotLight	SpotLight	SpotLight	SpotLight
SquadOrientationInterpolator	SquadOrientationInterpolator	SquadOrientationInterpolator		SquadOrientationInterpolator			
StaticGroup	StaticGroup	StaticGroup		StaticGroup	StaticGroup		
StreamAudioDestination	StreamAudioDestination	StreamAudioDestination		StreamAudioDestination			
StreamAudioSource	StreamAudioSource	StreamAudioSource		StreamAudioSource			
StringSensor	StringSensor	StringSensor		StringSensor			
SurfaceEmitter	SurfaceEmitter	SurfaceEmitter		SurfaceEmitter			
Switch	Switch	Switch		Switch	Switch	Switch	Switch
TexCoordChaser2D	TexCoordChaser2D	TexCoordChaser2D		TexCoordChaser2D	TexCoordChaser2D		
TexCoordDamper2D	TexCoordDamper2D	TexCoordDamper2D		TexCoordDamper2D			
Text	Text	Text		Text	Text	Text	Text
TextureBackground	TextureBackground	TextureBackground		TextureBackground	TextureBackground		
TextureCoordinate	TextureCoordinate	TextureCoordinate		TextureCoordinate	TextureCoordinate	TextureCoordinate	
TextureCoordinate3D	TextureCoordinate3D	TextureCoordinate3D		TextureCoordinate3D	TextureCoordinate3D		
TextureCoordinate4D	TextureCoordinate4D	TextureCoordinate4D		TextureCoordinate4D	TextureCoordinate4D		
TextureCoordinateGenerator	TextureCoordinateGenerator	TextureCoordinateGenerator		TextureCoordinateGenerator	TextureCoordinateGenerator		
TextureProjector	TextureProjector	TextureProjector		TextureProjector	TextureProjector		
TextureProjectorParallel	TextureProjectorParallel	TextureProjectorParallel		TextureProjectorParallel	TextureProjectorParallel		
TextureProperties	TextureProperties	TextureProperties		TextureProperties	TextureProperties		
TextureTransform	TextureTransform	TextureTransform		TextureTransform	TextureTransform	TextureTransform	
TextureTransform3D	TextureTransform3D	TextureTransform3D		TextureTransform3D	TextureTransform3D		
TextureTransformMatrix3D	TextureTransformMatrix3D	TextureTransformMatrix3D		TextureTransformMatrix3D	TextureTransformMatrix3D		
TimeSensor	TimeSensor	TimeSensor		TimeSensor		TimeSensor	TimeSensor
TimeTrigger	TimeTrigger	TimeTrigger		TimeTrigger	TimeTrigger	(Prototype available)	TimeTrigger
ToneMappedVolumeStyle	ToneMappedVolumeStyle	ToneMappedVolumeStyle		ToneMappedVolumeStyle	ToneMappedVolumeStyle		
TouchSensor	TouchSensor	TouchSensor		TouchSensor	TouchSensor	TouchSensor	TouchSensor
Transform	Transform	Transform		Transform	Transform	Transform	Transform
TransformSensor	TransformSensor	TransformSensor		TransformSensor	TransformSensor		
TransmitterPdu	TransmitterPdu	TransmitterPdu		TransmitterPdu	TransmitterPdu	(Java Prototype available)	TransmitterPdu
TriangleFanSet	TriangleFanSet	TriangleFanSet		TriangleFanSet	TriangleFanSet	(Prototype available)	TriangleFanSet
TriangleSet	TriangleSet	TriangleSet		TriangleSet	TriangleSet	(Prototype available)	TriangleSet
TriangleSet2D	TriangleSet2D	TriangleSet2D		TriangleSet2D		(Prototype available)	TriangleSet2D
TriangleStripSet	TriangleStripSet	TriangleStripSet		TriangleStripSet	TriangleStripSet	(Prototype available)	TriangleStripSet
TwoSidedMaterial	TwoSidedMaterial	TwoSidedMaterial		TwoSidedMaterial	TwoSidedMaterial		
UNIT	unit	unit		unit	unit		
UniversalJoint	UniversalJoint	UniversalJoint		UniversalJoint	UniversalJoint		
UnlitMaterial	UnlitMaterial	UnlitMaterial		UnlitMaterial			
Viewpoint	Viewpoint	Viewpoint		Viewpoint	Viewpoint	Viewpoint	Viewpoint
ViewpointGroup	ViewpointGroup	ViewpointGroup		ViewpointGroup	ViewpointGroup		

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Viewport	Viewport	Viewport		Viewport			
VisibilitySensor	VisibilitySensor	VisibilitySensor		VisibilitySensor	VisibilitySensor	VisibilitySensor	VisibilitySensor
VolumeData	VolumeData	VolumeData		VolumeData	VolumeData		
VolumeEmitter	VolumeEmitter	VolumeEmitter		VolumeEmitter			
VolumePickSensor	VolumePickSensor	VolumePickSensor		VolumePickSensor			
WindPhysicsModel	WindPhysicsModel	WindPhysicsModel		WindPhysicsModel			
WorldInfo	WorldInfo	WorldInfo		WorldInfo	WorldInfo	WorldInfo	WorldInfo
X3D	X3D	X3D		X3D	X3D	#VRML	#X3D, #VRML
Supported nodes and statements:	100%	100%		100%	73%	30%	44%
276	276	276		276	202	56	122
Unimplemented nodes and statements:							
0	0	0	276	0	74	-1	98
References						55 nodes in VRML97 Specification	
X3D v4.0 Architecture Draft Specification	X3D Schema Validation	X3D DOCTYPE (DTD) Validation		X3D Resources: Tooltips	X3D Schematron validation	83 nodes in VRML97 Amendment 1	
					VRML prototypes total:	55	
HTML5 support goals					VRML+Java prototypes total:	15	
** required for X3D Immersive Profile*							
** suggested for HTML5 support*							
**** priority nodes and statements missing:***							

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
CADFace	3.1	Full	CADGeometry	2	W3C Web Audio API
CADLayer	3.1	Full	CADGeometry	2	
CADPart	3.1	Full	CADGeometry	2	Supports glTF 2.0
IndexedQuadSet	3.1	Full	CADGeometry	1	
QuadSet	3.1	Full	CADGeometry	1	
component	3.0	Core	Core	1	Supports MIDI 2.0
connect	3.0	Immersive	Core	1	W3C Web Audio API
ExternProtoDeclare	3.0	Core	Core	1	alpha value optionally supported until level 4
field	3.0	Core	Core	1	
fieldValue	3.0	Core	Core	1	
head	3.0	Core	Core	1	W3C Web Audio API
IS	3.0	Immersive	Core	1	
meta	3.0	Core	Core	1	
MetadataBoolean	3.3	Core	Core	1	
MetadataDouble	3.0	Core	Core	1	
MetadataFloat	3.0	Core	Core	1	
MetadataInteger	3.0	Core	Core	1	
MetadataSet	3.0	Core	Core	1	
MetadataString	3.0	Core	Core	1	
ProtoBody	3.0	Core	Core	1	W3C Web Audio API
ProtoDeclare	3.0	Core	Core	1	
ProtoInstance	3.0	Core	Core	1	
ProtoInterface	3.0	Core	Core	1	
ROUTE	3.0	Core	Core	1	
Scene	3.0	Core	Core	1	
unit	3.3	Core	Core	1	W3C Web Audio API
WorldInfo	3.0	Core	Core	1	W3C Web Audio API
X3D	3.0	Core	Core	1	W3C Web Audio API
ComposedCubeMapTexture	3.1	Full	CubeMapTexturing	1	
GeneratedCubeMapTexture	3.1	Full	CubeMapTexturing	3	
ImageCubeMapTexture	3.1	Full	CubeMapTexturing	2	
DISEntityManager	3.2	Full	DIS	2	
DISEntityTypeMapping	3.2	Full	DIS	2	
EspduTransform	3.0	Full	DIS	1	
ReceiverPdu	3.0	Full	DIS	1	contacts_changed requires level 2
SignalPdu	3.0	Full	DIS	1	
TransmitterPdu	3.0	Full	DIS	1	15,000 colors minimum
Background	3.0	Interchange	EnvironmentalEffects	1	
Fog	3.0	Immersive	EnvironmentalEffects	2	
FogCoordinate	3.1	Full	EnvironmentalEffects	4	
LocalFog	3.1	Full	EnvironmentalEffects	4	15,000 colors minimum, alpha optional until level 4
TextureBackground	3.0	Full	EnvironmentalEffects	3	X3D statement
ProximitySensor	3.0	Interactive	EnvironmentalSensor	1	
TransformSensor	3.2	Full	EnvironmentalSensor	3	
VisibilitySensor	3.0	Immersive	EnvironmentalSensor	2	
BooleanFilter	3.0	Interactive	EventUtilities	1	ordered field is treated as field unless level 2
BooleanSequencer	3.0	Interactive	EventUtilities	1	
BooleanToggle	3.0	Interactive	EventUtilities	1	

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
BooleanTrigger	3.0	Interactive	EventUtilities	1	supports ProtoDeclare statement
IntegerSequencer	3.0	Interactive	EventUtilities	1	
IntegerTrigger	3.0	Interactive	EventUtilities	1	
TimeTrigger	3.0	Interactive	EventUtilities	1	
ColorChaser	3.3	Full	Followers	1	W3C Web Audio API
ColorDamper	3.2	Full	Followers	1	
CoordinateChaser	3.3	Full	Followers	1	
CoordinateDamper	3.2	Full	Followers	1	
OrientationChaser	3.2	Full	Followers	1	
OrientationDamper	3.2	Full	Followers	1	
PositionChaser	3.2	Full	Followers	1	
PositionChaser2D	3.2	Full	Followers	1	
PositionDamper	3.2	Full	Followers	1	
PositionDamper2D	3.2	Full	Followers	1	W3C Web Audio API
ScalarChaser	3.2	Full	Followers	1	Not scoped by parent Group or Transform
ScalarDamper	3.3	Full	Followers	1	
TexCoordChaser2D	3.3	Full	Followers	1	
TexCoordDamper2D	3.2	Full	Followers	1	
Arc2D	3.0	Full	Geometry2D	2	
ArcClose2D	3.0	Full	Geometry2D	2	W3C Web Audio API
Circle2D	3.0	Full	Geometry2D	2	
Disk2D	3.0	Full	Geometry2D	2	
Polyline2D	3.0	Immersive	Geometry2D	1	
Polypoint2D	3.0	Immersive	Geometry2D	1	
Rectangle2D	3.0	Immersive	Geometry2D	1	
TriangleSet2D	3.0	Full	Geometry2D	1	supports Inline event passing for scalable world animation
Box	3.0	Interchange	Geometry3D	1	statement supports ProtoDeclare statement
Cone	3.0	Interchange	Geometry3D	1	
Cylinder	3.0	Interchange	Geometry3D	1	Prototypes fields are Core, Script fields are Immersive
ElevationGrid	3.0	Interactive	Geometry3D	3	Optional until Interactive profile or Core component level 2
Extrusion	3.0	Immersive	Geometry3D	4	
IndexedFaceSet	3.0	Interchange	Geometry3D	2	
Sphere	3.0	Interchange	Geometry3D	1	
GeoCoordinate	3.0	Full	Geospatial	1	
GeoElevationGrid	3.0	Full	Geospatial	1	
GeoLocation	3.0	Full	Geospatial	1	
GeoLOD	3.0	Full	Geospatial	1	W3C Web Audio API
GeoMetadata	3.0	Full	Geospatial	1	
GeoOrigin	3.0	Full	Geospatial	1	
GeoPositionInterpolator	3.0	Full	Geospatial	1	
GeoProximitySensor	3.2	Full	Geospatial	2	
GeoTouchSensor	3.0	Full	Geospatial	1	
GeoTransform	3.2	Full	Geospatial	2	
GeoViewpoint	3.0	Full	Geospatial	1	
Group	3.0	Interchange	Grouping	1	
StaticGroup	3.0	Full	Grouping	3	
Switch	3.0	Interactive	Grouping	2	
Transform	3.0	Interchange	Grouping	1	

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
HAnimDisplacer	3.0	Full	H-Anim	1	
HAnimHumanoid	3.0	Full	H-Anim	2	addChildren, removeChildren optional until Interactive profile or component level 2
HAnimJoint	3.0	Full	H-Anim	1	
HAnimMotion	4.0	Full	H-Anim	3	X3D 4.0 supports HAnim 2.0, level 2 adds skin geometry
HAnimSegment	3.0	Full	H-Anim	1	
HAnimSite	3.0	Full	H-Anim	1	Supports BVH motion capture (mocap) conversion
ColorInterpolator	3.0	Interchange	Interpolation	2	
CoordinateInterpolator	3.0	Interchange	Interpolation	1	
CoordinateInterpolator2D	3.0	Full	Interpolation	3	matches HTML5 head statement for document meta information
EaseInEaseOut	3.2	Full	Interpolation	4	
NormalInterpolator	3.0	Interchange	Interpolation	2	
OrientationInterpolator	3.0	Interchange	Interpolation	1	
PositionInterpolator	3.0	Interchange	Interpolation	1	supports Inline event passing for scalable world animation
PositionInterpolator2D	3.0	Full	Interpolation	3	
ScalarInterpolator	3.0	Interchange	Interpolation	1	
SplinePositionInterpolator	3.2	Full	Interpolation	4	
SplinePositionInterpolator2D	3.2	Full	Interpolation	4	
SplineScalarInterpolator	3.2	Full	Interpolation	4	
SquadOrientationInterpolator	3.2	Full	Interpolation	5	
KeySensor	3.0	Interactive	KeyDeviceSensor	1	Inline can require higher profile to match parent scene. Optional support for load, refresh.
StringSensor	3.0	Interactive	KeyDeviceSensor	2	
Layer	3.2	Full	Layering	1	
LayerSet	3.2	Full	Layering	1	in support of ProtoDeclare statement
Viewport	3.2	Full	Layering	1	
Layout	3.2	Full	Layout	1	
LayoutGroup	3.2	Full	Layout	1	
LayoutLayer	3.2	Full	Layout	1	
ScreenFontStyle	3.2	Full	Layout	2	
ScreenGroup	3.2	Full	Layout	2	
DirectionalLight	3.0	Interchange	Lighting	1	
PointLight	3.0	Interactive	Lighting	2	
SpotLight	3.0	Interactive	Lighting	2	Supports glTF 2.0
Billboard	3.0	Immersive	Navigation	2	
Collision	3.0	Immersive	Navigation	2	W3C Web Audio API
LOD	3.0	Immersive	Navigation	2	
NavigationInfo	3.0	Interchange	Navigation	1	
OrthoViewpoint	3.2	Full	Navigation	3	
Viewpoint	3.0	Interchange	Navigation	1	Supports glTF 2.0
ViewpointGroup	3.2	Full	Navigation	3	
Anchor	3.0	Interactive	Networking	2	
EXPORT	3.0	Interactive	Networking	3	matches HTML5 head statement for document meta information
IMPORT	3.0	Interactive	Networking	3	
Inline	3.0	Interactive	Networking	2	
LoadSensor	3.0	Immersive	Networking	3	
Contour2D	3.0	Full	NURBS	4	
ContourPolyline2D	3.0	Full	NURBS	3	can construct and validate strictly typed metadataa vocabularies
CoordinateDouble	3.0	Full	NURBS	1	
NurbsCurve	3.0	Full	NURBS	1	W3C Web Audio API

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
NurbsCurve2D	3.0	Full	NURBS	3	
NurbsOrientationInterpolator	3.0	Full	NURBS	1	
NurbsPatchSurface	3.0	Full	NURBS	1	
NurbsPositionInterpolator	3.0	Full	NURBS	1	
NurbsSet	3.0	Full	NURBS	2	
NurbsSurfaceInterpolator	3.0	Full	NURBS	1	
NurbsSweptSurface	3.0	Full	NURBS	3	
NurbsSwungSurface	3.0	Full	NURBS	3	
NurbsTextureCoordinate	3.0	Full	NURBS	1	
NurbsTrimmedSurface	3.0	Full	NURBS	4	
BoundedPhysicsModel	3.2	Full	ParticleSystems	2	
ConeEmitter	3.2	Full	ParticleSystems	1	
ExplosionEmitter	3.2	Full	ParticleSystems	1	
ForcePhysicsModel	3.2	Full	ParticleSystems	1	
ParticleSystem	3.2	Full	ParticleSystems	1	
PointEmitter	3.2	Full	ParticleSystems	1	
PolylineEmitter	3.2	Full	ParticleSystems	1	
SurfaceEmitter	3.2	Full	ParticleSystems	2	
VolumeEmitter	3.2	Full	ParticleSystems	2	
WindPhysicsModel	3.2	Full	ParticleSystems	1	
LinePickSensor	3.2	Full	Picking	1	
PickableGroup	3.2	Full	Picking	1	
PointPickSensor	3.2	Full	Picking	1	
PrimitivePickSensor	3.2	Full	Picking	2	
VolumePickSensor	3.2	Full	Picking	3	W3C Web Audio API
CylinderSensor	3.0	Interactive	PointingDeviceSensor	1	
PlaneSensor	3.0	Interactive	PointingDeviceSensor	1	Need level 3 for geometry field
SphereSensor	3.0	Interactive	PointingDeviceSensor	1	W3C Web Audio API
TouchSensor	3.0	Interactive	PointingDeviceSensor	1	Supports glTF 2.0
ClipPlane	3.2	Full	Rendering	5	
Color	3.0	Interchange	Rendering	1	
ColorRGBA	3.0	Interchange	Rendering	1	
Coordinate	3.0	Interchange	Rendering	1	
IndexedLineSet	3.0	Interchange	Rendering	1	
IndexedTriangleFanSet	3.0	Interchange	Rendering	3	*radius* optionally supported, linear attenuation
IndexedTriangleSet	3.0	Interchange	Rendering	3	
IndexedTriangleStripSet	3.0	Interchange	Rendering	3	Supports glTF 2.0
LineSet	3.0	Interchange	Rendering	1	
Normal	3.0	Interchange	Rendering	2	
PointSet	3.0	Interchange	Rendering	1	
TriangleFanSet	3.0	Interchange	Rendering	3	
TriangleSet	3.0	Interchange	Rendering	3	
TriangleStripSet	3.0	Interchange	Rendering	3	
BallJoint	3.2	Full	RigidBodyPhysics	2	
CollidableOffset	3.2	Full	RigidBodyPhysics	1	
CollidableShape	3.2	Full	RigidBodyPhysics	1	
CollisionCollection	3.2	Full	RigidBodyPhysics	1	
CollisionSensor	3.2	Full	RigidBodyPhysics	1	Non-uniform scale not supported until level 3

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
CollisionSpace	3.2	Full	RigidBodyPhysics	1	
Contact	3.2	Full	RigidBodyPhysics	2	
DoubleAxisHingeJoint	3.2	Full	RigidBodyPhysics	2	Optional until Interactive profile or Core component level 2
MotorJoint	3.2	Full	RigidBodyPhysics	2	Optional until Interactive profile or Core component level 2
RigidBody	3.2	Full	RigidBodyPhysics	2	Optional until Interactive profile or Core component level 2
RigidBodyCollection	3.2	Full	RigidBodyPhysics	2	Optional until Interactive profile or Core component level 2
SingleAxisHingeJoint	3.2	Full	RigidBodyPhysics	2	position_changed, orientation_changed optional until level 2
SliderJoint	3.2	Full	RigidBodyPhysics	2	
UniversalJoint	3.2	Full	RigidBodyPhysics	2	
Script	3.0	Immersive	Scripting	1	
ComposedShader	3.1	Full	Shaders	1	
FloatVertexAttribute	3.1	Full	Shaders	1	
Matrix3VertexAttribute	3.1	Full	Shaders	1	
Matrix4VertexAttribute	3.1	Full	Shaders	1	
PackagedShader	3.1	Full	Shaders	1	
ProgramShader	3.1	Full	Shaders	1	
ShaderPart	3.1	Full	Shaders	1	X3D statement in XML encoding (implicit in ClassicVRML, VRML97)
ShaderProgram	3.1	Full	Shaders	1	
Appearance	3.0	Interchange	Shape	1	
FillProperties	3.0	Full	Shape	3	
LineProperties	3.0	Immersive	Shape	2	
Material	3.0	Interchange	Shape	1	Use level 4 for full capabilities
PhysicalMaterial	4.0	Full	Shape	2	
PointProperties	4.0	Full	Shape	5	
Shape	3.0	Interchange	Shape	1	
~~TwoSidedMaterial~~	~~3.2~~	~~Full~~	~~Shape~~	~~4~~	
UnlitMaterial	4.0	Full	Shape	1	
AcousticProperties	4.0	Full	Sound	2	
Analyser	4.0	Full	Sound	2	
AudioClip	3.0	Immersive	Sound	1	
AudioDestination	4.0	Full	Sound	2	W3C Web Audio API, adding full 3D spatial auralization
AudioDestination	4.0	Full	Sound	2	
BufferAudioSource	4.0	Full	Sound	2	
ChannelMerger	4.0	Full	Sound	2	
ChannelSelector	4.0	Full	Sound	2	
ChannelSplitter	4.0	Full	Sound	2	
Convolver	4.0	Full	Sound	2	beamWidth optionally supported. radius optionally supported, linear attenuation
Delay	4.0	Full	Sound	2	
DynamicsCompressor	4.0	Full	Sound	2	
Gain	4.0	Full	Sound	2	W3C Web Audio API
ListenerPointSource	4.0	Full	Sound	2	W3C Web Audio API
MicrophoneSource	4.0	Full	Sound	2	
OscillatorSource	4.0	Full	Sound	2	
PeriodicWave	4.0	Full	Sound	2	
Sound	3.0	Immersive	Sound	1	
SpatialSound	4.0	Full	Sound	2	
StreamAudioDestination	4.0	Full	Sound	2	
StreamAudioSource	4.0	Full	Sound	2	

X3D v4.0 Node and Statement Profiles, Components and Levels			updated 16 January 2023		
X3D Abstract Specification Nodes, Statements	*First Version*	*Minimum Profile*	*Component*	*Component Level for Full Support*	*Notes*
CADAssembly	3.1	Full	CADGeometry	2	W3C Web Audio API
FontStyle	3.0	Immersive	Text	1	
Text	3.0	Immersive	Text	1	
TextureProjector	4.0	Full	TextureProjection	1	
TextureProjectorParallel	4.0	Full	TextureProjection	2	
ImageTexture	3.0	Interchange	Texturing	1	component renamed (previously TextureProjector)
MovieTexture	3.0	Immersive	Texturing	3	component renamed (previously TextureProjector)
MultiTexture	3.0	Interchange	Texturing	2	
MultiTextureCoordinate	3.0	Interchange	Texturing	2	
MultiTextureTransform	3.0	Interchange	Texturing	2	
PixelTexture	3.0	Interchange	Texturing	1	
TextureCoordinate	3.0	Interchange	Texturing	1	
TextureCoordinateGenerator	3.0	Interchange	Texturing	2	
TextureProperties	3.2	Full	Texturing	2	
TextureTransform	3.0	Interchange	Texturing	1	
ComposedTexture3D	3.1	Full	Texturing3D	1	addChildren, removeChildren optional until Interactive profile or component level 2
ImageTexture3D	3.1	Full	Texturing3D	2	
PixelTexture3D	3.1	Full	Texturing3D	1	
TextureCoordinate3D	3.1	Full	Texturing3D	1	
TextureCoordinate4D	3.1	Full	Texturing3D	1	
TextureTransform3D	3.1	Full	Texturing3D	1	
TextureTransformMatrix3D	3.1	Full	Texturing3D	1	
TimeSensor	3.0	Interchange	Time	1	Deprecated
BlendedVolumeStyle	3.3	Full	VolumeRendering	3	X3D statement
BoundaryEnhancementVolumeStyle	3.3	Full	VolumeRendering	2	
CartoonVolumeStyle	3.3	Full	VolumeRendering	3	Supports glTF 2.0
ComposedVolumeStyle	3.3	Full	VolumeRendering	2	
EdgeEnhancementVolumeStyle	3.3	Full	VolumeRendering	2	
IsoSurfaceVolumeData	3.3	Full	VolumeRendering	2	
OpacityMapVolumeStyle	3.3	Full	VolumeRendering	2	
ProjectionVolumeStyle	3.3	Full	VolumeRendering	2	
SegmentedVolumeData	3.3	Full	VolumeRendering	2	
ShadedVolumeStyle	3.3	Full	VolumeRendering	3	
SilhouetteEnhancementVolumeStyle	3.3	Full	VolumeRendering	2	
ToneMappedVolumeStyle	3.3	Full	VolumeRendering	2	
VolumeData	3.3	Full	VolumeRendering	1	X3D statement

Reference:
X3D v4.0 Architecture Draft Specification

X3D Interactive, X3D MPEG4 Interactive Profile Comparison

http://www.web3d.org/specifications/X3dNodeInventoryComparison-X3dInteractiveMpeg4Interactive.pdf

X3D Interactive Profile	MPEG4 Interactive Profile	To be added
Anchor	Anchor	
Appearance	Appearance	
Background	Background	
BooleanFilter	** not included by MPEG*	
BooleanSequencer	** not included by MPEG*	
BooleanToggle	** not included by MPEG*	
BooleanTrigger	** not included by MPEG*	
Box	Box	
Color	Color	
ColorInterpolator	ColorInterpolator	
ColorRGBA	ColorRGBA	
Cone	Cone	
Coordinate	Coordinate	
CoordinateInterpolator	CoordinateInterpolator	
Cylinder	Cylinder	
CylinderSensor	CylinderSensor	
DirectionalLight	DirectionalLight	
ElevationGrid	ElevationGrid	
Group	Group	
ImageTexture	ImageTexture	
IndexedFaceSet	IndexedFaceSet	
IndexedLineSet	IndexedLineSet	
IndexedTriangleFanSet	** not included by MPEG*	
IndexedTriangleSet	** not included by MPEG*	
IndexedTriangleStripSet	** not included by MPEG*	
Inline	Inline	
IntegerSequencer	** not included by MPEG*	
IntegerTrigger	** not included by MPEG*	
KeySensor	** not included by MPEG*	
LineSet	LineSet	
Material	Material	
MetadataBoolean	** not included by MPEG*	
MetadataDouble	MetadataDouble	
MetadataFloat	MetadataFloat	
MetadataInteger	MetadataInteger	
MetadataSet	MetadataSet	
MetadataString	MetadataString	
MultiTexture	** not included by MPEG*	
MultiTextureCoordinate	** not included by MPEG*	
MultiTextureTransform	** not included by MPEG*	
NavigationInfo	NavigationInfo	
Normal	** not included by MPEG*	
NormalInterpolator	NormalInterpolator	

X3D Interactive, X3D MPEG4 Interactive Profile Comparison

http://www.web3d.org/specifications/X3dNodeInventoryComparison-X3dInteractiveMpeg4Interactive.pdf

X3D Interactive Profile	MPEG4 Interactive Profile	To be added
OrientationInterpolator	OrientationInterpolator	
PixelTexture	PixelTexture	
PlaneSensor	PlaneSensor	
PointLight	PointLight	
PointSet	PointSet	
PositionInterpolator	PositionInterpolator	
ProximitySensor	ProximitySensor	
ScalarInterpolator	ScalarInterpolator	
Shape	Shape	
Sphere	Sphere	
SphereSensor	SphereSensor	
SpotLight	SpotLight	
StringSensor	** not included by MPEG*	
Switch	Switch	
TextureCoordinate	TextureCoordinate	
TextureCoordinateGenerator	** not included by MPEG*	
TextureTransform	TextureTransform	
TimeSensor	TimeSensor	
TimeTrigger	** not included by MPEG*	
TouchSensor	TouchSensor	
Transform	Transform	
TriangleFanSet	** not included by MPEG*	
TriangleSet	** not included by MPEG*	
TriangleStripSet	** not included by MPEG*	
Viewpoint	Viewpoint	
VisibilitySensor	** not included by MPEG*	
WorldInfo	WorldInfo	
Total nodes:		
70	48	0
Missing nodes:		
0	22	0

References:

http://www.web3d.org/files/specifications/19775-1/V3.3/Part01/interactive.html
http://www.web3d.org/files/specifications/19775-1/V3.3/Part01/MPEG4interactive.html