FME

Transformer Reference Guide

Safe Software

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Category: 3D

Transformers that create or manipulate 3D geometry and formats, including surfaces, solids, meshes, and appearances.

- 3DAffiner
- 3DArcReplacer
- 3DForcer
- 3DInterpolator
- 3DRotator
- 3DSlicer
- AppearanceExtractor
- AppearanceMerger
- AppearanceRemover
- AppearanceSetter
- AppearanceStyler
- Bufferer
- CityEngineModelGenerator
- Creator
- CSGBuilder
- CSGEvaluator
- DEMDistanceCalculator
- DEMGenerator
- DimensionExtractor
- ElevationExtractor
- Extruder
- FaceReplacer
- GeometryInstantiator
- GeometryPartExtractor
- GeometryPropertyExtractor
- GeometryPropertyRemover
- GeometryPropertyRenamer
- GeometryPropertySetter
- IFCPropertySetDefinitionCreator
- IFCQuantitySetDefinitionCreator
- MeshMerger
- MeshSimplifier
- Offsetter
- PipeEvaluator
- PipeReplacer
- PlanarityFilter
- PointCloudSurfaceBuilder
- RasterDEMGenerator
- RasterHillshader
- RasterSlopeCalculator
- Scaler
- SecondOrderConformer
- SharedItemAdder
- SharedItemIDExtractor
- SharedItemIDSetter
- SharedItemRetriever

- SolidBuilder

- SolidDissolver

- SurfaceBuilder

- SurfaceDissolver

- SurfaceDraper

- SurfaceFootprintReplacer

- SurfaceModeller

- SurfaceOnSurfaceOverlayer

- SurfaceSplitter

- TINGenerator

- VertexNormalGenerator

- VertexNormalRemover

- VolumeCalculator

Category: Attributes

Transformers to manage attributes, attribute values, and lists.

- Aggregator
- AttributeCompressor
- AttributeCopier
- AttributeCreator
- AttributeDecompressor
- AttributeDereferencer
- AttributeExploder
- AttributeExposer
- AttributeFileReader
- AttributeFileWriter
- AttributeKeeper
- AttributeManager
- AttributeRemover
- AttributeRenamer
- AttributeSplitter
- BulkAttributeRemover
- BulkAttributeRenamer
- DatabaseJoiner
- Deaggregator
- ListBuilder
- ListConcatenator
- ListCopier
- ListExploder

- ListExpressionPopulator
- ListIndexer
- ListPopulator
- ListRenamer
- ListSorter
- NullAttributeMapper

Category: Calculated Values

Transformers to calculate values using attributes, geometry, coordinates, dates and times, statistics, expressions, user parameters, and more.

- Aggregator
- AngleConverter
- AngularityCalculator
- ArcPropertyExtractor
- AreaCalculator
- AttributePivoter
- AttributeRounder
- BaseConverter
- BoundsExtractor
- CenterPointExtractor
- CircularityCalculator
- Classifier
- CoordinateConcatenator
- CoordinateExtractor
- Counter
- CRCCalculator
- DateTimeCalculator
- DateTimeConverter
- DateTimeRounder
- DateTimeStamper
- DecimalDegreesCalculator
- DEMDistanceCalculator
- DensityCalculator

- DimensionExtractor
- DMSCalculator
- ElevationExtractor
- EllipsePropertyExtractor
- ExpressionEvaluator
- GeometryExtractor
- GeometryPartCounter
- GOIDGenerator
- H3HexagonalIndexer
- HoleCounter
- LeftRightSpatialCalculator
- LengthCalculator
- LengthToPointCalculator
- ListHistogrammer
- ListRangeExtractor
- MeasureExtractor
- MeasureGenerator
- ModuloCounter
- NetworkCostCalculator
- NetworkTopologyCalculator
- OrientationExtractor
- PointCloudExpressionEvaluator
- PointCloudPropertyExtractor

- PointCloudStatisticsCalculator
- PointPropertyExtractor
- RandomNumberGenerator
- RasterAspectCalculator
- RasterBandMinMaxExtractor
- RasterBandPropertyExtractor
- RasterCellValueCalculator
- RasterExpressionEvaluator
- RasterPropertyExtractor
- RasterSingularCellValueCalculator
- RasterStatisticsCalculator
- ReprojectAngleCalculator
- ReprojectLengthCalculator
- StatisticsCalculator
- StreamOrderCalculator
- StreamPriorityCalculator
- StringLengthCalculator
- SubstringExtractor
- TempPathnameCreator
- TextLocationExtractor
- TextPropertyExtractor
- TextureCoordinateSetter
- UniqueIdentifierGenerator
- VertexCounter
- VolumeCalculator

Category: Cartography and Reports

Transformers that prepare and style data for visual presentation and reporting.

- AreaAmalgamator
- ChartGenerator
- CommonLocalReprojector
- Curvefitter
- DGNStyler
- Displacer
- DocumentPDFStyler
- DWGStyler
- ExcelConditionalFormatter
- ExcelStyler
- FeatureColorSetter
- Generalizer
- GeometryColorSetter
- HTMLLayouter
- HTMLReportGenerator
- ImageRasterizer
- KMLPropertySetter
- KMLRegionSetter
- KMLStyler
- KMLTimeSetter
- KMLTourBuilder
- KMLViewSetter
- Labeler
- LabelPointReplacer
- MapboxStyler
- MapInfoStyler
- MapnikRasterizer
- MSWordStyler
- NumericRasterizer
- PDFPageFormatter
- PDFStyler
- PowerPointStyler
- RasterHillshader
- RevitStyler
- SherbendGeneralizer
- TextAdder
- TextPropertySetter
- TextStroker
- WebMapTiler
- WordToDocumentPDFStyler

Category: Coordinates

Transformers that manipulate coordinates and coordinate systems, including reprojection, georeferencing, warping, and coordinate extraction.

- 2DForcer
- 3DAffiner
- 3DForcer
- Affiner
- ArcGISGridSnapper
- AttributeReprojector
- CenterPointExtractor
- CommonLocalReprojector
- CoordinateConcatenator
- CoordinateExtractor
- CoordinateRounder
- CoordinateSwapper
- CoordinateSystemDescriptionConverter
- CoordinateSystemExtractor
- CoordinateSystemRemover
- CoordinateSystemSetter
- CsmapAttributeReprojector
- CsmapReprojector
- DecimalDegreesCalculator
- DimensionExtractor
- DMSCalculator
- ElevationExtractor
- EsriReprojector
- GridInQuestIIReprojector
- GtransAttributeReprojector
- GtransReprojector
- LatLongToMGRSConverter
- LocalCoordinateSystemSetter
- MGRSToLatLongConverter
- PROJAttributeReprojector
- PROJReprojector
- RasterGCPExtractor
- RasterGCPSetter
- RasterGeoreferencer
- ReframeReprojector
- ReprojectAngleCalculator
- ReprojectLengthCalculator
- Reprojector
- RubberSheeter
- Scaler
- SecondOrderConformer
- TextureCoordinateSetter
- VertexCounter
- VertexNormalGenerator
- VertexNormalRemover
- VertexRemover

Category: Data Quality

Transformers useful for analyzing data quality, validating attributes and geometry.

- AngularityCalculator
- AreaGapAndOverlapCleaner
- AttributeValidator
- ChangeDetector
- CircularityCalculator
- ClosedCurveFilter
- CommonSegmentFinder
- ConvexityFilter
- CRCCalculator
- DimensionExtractor
- DuplicateFilter
- ElevationExtractor
- FeatureTypeFilter
- GeometryFilter
- GeometryPartCounter
- GeometryValidator
- HoleCounter
- Inspector
- JSONValidator
- ListDuplicateRemover
- ListElementCounter
- ListHistogrammer
- Matcher

- NullAttributeMapper
- PlanarityFilter
- Sampler
- Snapper
- Snipper
- SpatialFilter
- SpatialRelator
- SpikeRemover
- SummaryReporter
- Tester
- TestFilter
- VertexCounter

Category: Database

Transformers that are useful for working with databases.

- AggregateFilter
- Aggregator
- AttributeEncoder
- AttributeFilter
- AttributeKeeper
- AttributeManager
- AttributeRangeFilter
- AttributeRangeMapper
- AttributeRenamer
- AttributeRounder
- AttributeSplitter
- AttributeTrimmer
- AttributeValidator
- AttributeValueMapper
- BinaryDecoder
- BinaryEncoder
- ChangeDetector
- DatabaseDeleter
- DatabaseJoiner
- DatabaseQuerier
- DatabaseUpdater
- DateTimeCalculator
- DateTimeConverter
- DateTimeRounder
- DateTimeStamper
- Deaggregator
- DuplicateFilter
- ExcelConditionalFormatter
- ExcelStyler
- FeatureJoiner
- FeatureMerger
- FeatureReader
- FeatureTypeFilter
- FeatureWriter
- GeometryFilter
- GoogleBigQueryConnector
- InlineQuerier
- Matcher
- NullAttributeMapper
- SchemaMapper
- SchemaScanner
- Sorter
- SpatialFilter
- SQLCreator
- SQLExecutor
- StringCaseChanger

- StringConcatenator
- StringFormatter
- Tester
- TestFilter
- TextDecoder
- TextEncoder

Category: Filters and Joins

Transformers for dividing and merging data in a workflow based on attribute values, geometry characteristics, and spatial relationships.

- AggregateFilter
- Aggregator
- AreaOnAreaOverlayer
- AttributeFilter
- AttributePivoter
- AttributeRangeFilter
- ChangeDetector
- ClosedCurveFilter
- ConvexityFilter
- DatabaseJoiner
- Deaggregator
- DuplicateFilter
- FeatureJoiner
- FeatureMerger
- FeatureReader
- FeatureTypeFilter
- GeometryFilter
- LineOnAreaOverlayer
- LineOnLineOverlayer
- ListBasedFeatureMerger
- MultipleGeometryFilter
- NeighborhoodAggregator
- NLPClassifier
- NLPTrainer
- PlanarityFilter
- PointCloudFilter
- PointCloudMerger
- PointOnAreaOverlayer
- PointOnLineOverlayer
- PointOnPointOverlayer
- RasterMosaicker
- Sampler
- SpatialFilter
- SpatialRelator
- Tester
- TestFilter
- TraitMerger

Category: Format-Specific

Transformers related to specific data formats, or that require selection of a format.

- ArcGISGridSnapper
- AttributeFileReader
- AttributeFileWriter
- DatabaseDeleter
- DatabaseUpdater
- DGNStyler
- DWGStyler
- EsriReprojector
- ExcelConditionalFormatter
- ExcelStyler
- FeatureReader
- FeatureWriter
- GeometryExtractor
- GeometryReplacer
- GeoRSSFeatureComposer
- GeoRSSFeatureReader
- GMLFeatureComposer
- HTMLLayouter
- HTMLReportGenerator
- HTMLToXHTMLConverter
- IFCPropertySetDefinitionCreator
- IFCQuantitySetDefinitionCreator
- JSONAppender
- JSONExtractor
- JSONFlattener
- JSONFormatter
- JSONFragmenter
- JSONTemplater
- JSONUpdater
- JSONValidator
- KMLPropertySetter
- KMLRegionSetter
- KMLStyler
- KMLTimeSetter
- KMLTourBuilder
- KMLViewSetter
- MapboxStyler
- MapInfoStyler
- PDFPageFormatter
- PDFStyler
- RCaller
- RevitStyler
- WebMapTiler
- XMLAppender
- XMLFeatureMapper
- XMLFlattener

- XMLFormatter
- XMLFragmenter
- XMLNamespaceDeclarer
- XMLSampleGenerator
- XMLTemplater
- XMLUpdater
- XMLValidator
- XMLXQueryExploder
- XMLXQueryExtractor
- XMLXQueryUpdater
- XSLTProcessor
- YAMLtoJSONConverter

Category: Geometries

Transformers that create or manipulate geometry.

- 2DArcReplacer
- 2DBoxReplacer
- 2DEllipseReplacer
- 2DForcer
- 2DGridAccumulator
- 2DGridCreator
- 3DArcReplacer
- 3DForcer
- 3DInterpolator
- 3DRotator
- 3DSlicer
- AffineWarper
- AnchoredSnapper
- AngleConverter
- ArcEstimator
- ArcGISGridSnapper
- ArcPropertySetter
- ArcStroker
- AreaAmalgamator
- AreaBuilder
- AreaGapAndOverlapCleaner
- BoundingBoxReplacer
- CenterlineReplacer

- CenterPointReplacer
- Chopper
- CityEngineModelGenerator
- CoordinateRounder
- CoordinateSwapper
- CSGBuilder
- Curvefitter
- Densifier
- Displacer
- Dissolver
- DonutBridgeBuilder
- DonutBuilder
- DonutHoleExtractor
- EllipsePropertySetter
- Extruder
- FaceReplacer
- Generalizer
- GeometryCoercer
- GeometryCopier
- GeometryExposer
- GeometryExtractor
- GeometryNameExtractor
- GeometryNameSetter

- GeometryRefiner
- GeometryRemover
- GeometryReplacer
- H3HexagonalIndexer
- HullReplacer
- Intersector
- LabelPointReplacer
- LineBuilder
- LineCloser
- LineCombiner
- LineExtender
- MeasureRemover
- MeasureSetter
- MeshMerger
- MeshSimplifier
- MinimumAreaForcer
- MinimumSpanningCircleReplacer
- MultipleGeometryCoercer
- OffsetCurveGeneratorOffsetter
- Orientor
- PathBuilder
- PathSplitter
- PipeEvaluator
- PipeReplacer
- PointCloudSurfaceBuilder
- PointPropertySetter
- Rotator

- RubberSheeter
- Scaler
- SherbendGeneralizer
- Snapper
- Snipper
- SolidBuilder
- SolidDissolver
- SpikeRemover
- SurfaceDissolver
- SurfaceFootprintReplacer
- SurfaceSplitter
- TextAdder
- Tiler
- TINGenerator
- Triangulator
- VertexCreator
- VertexNormalGenerator
- VertexNormalRemover
- VertexRemover

Category: Integrations

Transformers that integrate external tools such as web services and apps.

- ArcGISAttachmentConnector
- ArcGISBranchVersionManager
- ArcGISOnlineConnector
- AutodeskBIM360DocsConnector
- AutodeskDocsConnector
- AzureBlobStorageConnector
- AzureFileStorageConnector
- AzureQueueStorageConnector
- AzureServiceBusConnector
- BoxConnector
- CityEngineModelGenerator
- CKANConnector
- CsmapAttributeReprojector
- CsmapReprojector
- DatabaseDeleter
- DatabaseUpdater
- DropboxConnector
- Emailer
- EsriReprojector
- FMEFlowJobSubmitter
- FMEFlowNotifier
- FTPCaller
- Geocoder
- GoogleCloudStorageConnector
- GoogleDriveConnector
- GridInQuestIIReprojector
- GtransAttributeReprojector
- GtransReprojector
- HDFSConnector
- HTMLExtractor
- IBMMQConnector
- JMSReceiver
- JMSSender
- KinesisReceiver
- KinesisSender
- OneDriveConnector
- PROJAttributeReprojector
- ProjectWiseWSGConnector
- PROJReprojector
- RabbitMQConnector
- RCaller
- ReframeReprojector
- S3Connector
- SalesforceConnector
- SharePointListAttachmentConnector
- SharePointOnlineConnector

- SlackConnector
- SNSSender
- TCPIPReceiver
- TCPIPSender
- TransporterReceiver
- TransporterSender
- TrelloConnector
- TrimbleConnectConnector
- TrimbleUnityConnector

Category: Point Clouds

Transformers used with point cloud features.

- DEMGenerator
- GeometryCoercer
- PointCloudCombiner
- PointCloudComponentAdder
- PointCloudComponentCopier
- PointCloudComponentKeeper
- PointCloudComponentRemover
- PointCloudComponentRenamer
- PointCloudComponentTypeCoercer
- PointCloudConsumer
- PointCloudCreator
- PointCloudExpressionEvaluator
- PointCloudExtractor
- PointCloudFilter
- PointCloudMerger
- PointCloudOnRasterComponentSetter
- PointCloudPropertyExtractor
- PointCloudReplacer
- PointCloudSimplifier
- PointCloudSorter
- PointCloudSplitter
- PointCloudStatisticsCalculator
- PointCloudSurfaceBuilder

- PointCloudThinner
- PointCloudToPointCoercer
- PointCloudTransformationApplier
- SurfaceDraper
- SurfaceModeller

Category: Rasters

Transformers used with raster features.

- AppearanceExtractor
- AppearanceMerger
- AppearanceRemover
- AppearanceSetter
- AppearanceStyler
- ChartGenerator
- DEMDistanceCalculator
- GoogleVisionConnector
- ImageFetcher
- ImageRasterizer
- MapnikRasterizer
- NumericRasterizer
- PointCloudOnRasterComponentSetter
- PointOnRasterValueExtractor
- RasterAspectCalculator
- RasterBandAdder
- RasterBandCombiner
- RasterBandInterpretationCoercer
- RasterBandKeeper
- RasterBandMinMaxExtractor
- RasterBandNameSetter
- RasterBandNodataRemover
- RasterBandNodataSetter
- RasterBandOrderer
- RasterBandPropertyExtractor
- RasterBandRemover
- RasterBandSeparator
- RasterCellCoercer
- RasterCellOriginSetter
- RasterCellValueCalculator
- RasterCellValueReplacer
- RasterCellValueRounder
- RasterCheckpointer
- RasterConsumer
- RasterConvolver
- RasterDEMGenerator
- RasterDiffuser
- RasterExpressionEvaluator
- RasterExtentsCoercer
- RasterExtractor
- RasterGCPExtractor
- RasterGCPSetter
- RasterGeoreferencer
- RasterHillshader
- RasterInterpretationCoercer
- RasterMosaicker

- RasterNumericCreator
- RasterObjectDetectionModelTrainer
- RasterObjectDetector
- RasterObjectDetectorSampleGenerator
- RasterObjectDetectorSamplePreparer
- RasterPaletteAdder
- RasterPaletteExtractor
- RasterPaletteGenerator
- RasterPaletteInterpretationCoercer
- RasterPaletteNodataSetter
- RasterPaletteRemover
- RasterPaletteResolver
- RasterPropertyExtractor
- RasterPyramider
- RasterRegisterer
- RasterReplacer
- RasterResampler
- RasterRGBCreator
- RasterRotationApplier
- RasterSegmenter
- RasterSelector
- RasterSingularCellValueCalculator
- RasterSlopeCalculator
- RasterStatisticsCalculator
- RasterSubsetter
- RasterTiler
- RasterToPolygonCoercer

- RCaller
- TextStroker
- VectorOnRasterOverlayer
- WebMapTiler

Category: Spatial Analysis

Transformers that provide information or manipulate geometry based on spatial relationships.

- 3DSlicer
- AffineWarper
- AnchoredSnapper
- ArcGISGridSnapper
- AreaAmalgamator
- AreaBuilder
- AreaOnAreaOverlayer
- BoundingBoxAccumulator
- Bufferer
- CenterlineReplacer
- CenterPointReplacer
- Clipper
- ContourGenerator
- DEMDistanceCalculator
- Displacer
- Dissolver
- DonutBridgeBuilder
- FeatureReader
- HullAccumulator
- Intersector
- LineOnAreaOverlayer
- LineOnLineOverlayer
- NeighborFinder
- NeighborhoodAggregator
- NeighborPairFinder
- NetworkCostCalculator
- NetworkFlowOrientor
- NetworkTopologyCalculator
- Offsetter
- PointOnAreaOverlayer
- PointOnLineOverlayer
- PointOnPointOverlayer
- PointOnRasterValueExtractor
- SectorGenerator
- ShortestPathFinder
- Snapper
- SolidDissolver
- SpatialFilter
- SpatialRelator
- SpatialSorter
- SurfaceBuilder
- SurfaceDissolver
- SurfaceDraper
- SurfaceOnSurfaceOverlayer
- TopferIndexCalculator
- TopologyBuilder

- VectorOnRasterOverlayer
- VoronoiCellGenerator
- VoronoiDiagrammer

Category: Strings

Transformers to manipulate strings, including dates.

- AngleConverter
- AttributeCompressor
- AttributeDecompressor
- AttributeEncoder
- AttributeExploder
- AttributePivoter
- AttributeRangeMapper
- AttributeReprojector
- AttributeRounder
- AttributeSplitter
- AttributeTrimmer
- AttributeValidator
- AttributeValueMapper
- BaseConverter
- BinaryDecoder
- BinaryEncoder
- CharacterCodeExtractor
- CharacterCodeReplacer
- CoordinateConcatenator
- CoordinateSystemDescriptionConverter
- DateTimeConverter
- DimensionExtractor
- ElevationExtractor

- ExpressionEvaluator
- FilenamePartExtractor
- HTMLExtractor
- HTMLToXHTMLConverter
- ListDuplicateRemover
- ListSearcher
- ListSummer
- NLPClassifier
- NLPTrainer
- NullAttributeMapper
- RandomNumberGenerator
- StringCaseChanger
- StringConcatenator
- StringFormatter
- StringLengthCalculator
- StringPadder
- StringPairReplacer
- StringReplacer
- StringSearcher
- SubstringExtractor
- TextDecoder
- TextEncoder

Category: Web

Transformers related to data and services on the internet and web-based usage of languages such as XML and JSON.

- AmazonAthenaConnector
- ArcGISAttachmentConnector
- ArcGISBranchVersionManager
- ArcGISOnlineConnector
- AttributeEncoder
- AutodeskBIM360DocsConnector
- AutodeskDocsConnector
- AWSIoTConnector
- AzureAIVisionConnector
- AzureBlobStorageConnector
- AzureEventHubsConnector
- AzureFileStorageConnector
- AzureIoTConnector
- AzureQueueStorageConnector
- AzureServiceBusConnector
- AzureTextAnalyticsConnector
- BoxConnector
- CesiumIonConnector
- ChartGenerator
- CKANConnector
- ComprehendConnector
- Decelerator
- DropboxConnector
- Emailer
- EthereumConnector
- FMEFlowJobSubmitter
- FMEFlowNotifier
- FTPCaller
- Generalizer
- Geocoder
- GeoRSSFeatureComposer
- GeoRSSFeatureReader
- GoogleBigQueryConnector
- GoogleCloudPubSubConnector
- GoogleCloudStorageConnector
- GoogleDriveConnector
- GoogleIoTConnector
- GoogleLanguageConnector
- GoogleVisionConnector
- HDFSConnector
- HTMLExtractor
- HTMLLayouter
- HTMLReportGenerator
- HTMLToXHTMLConverter
- HTTPCaller
- IBMIoTConnector

- IBMMQConnector
- JMSReceiver
- JMSSender
- JSONAppender
- JSONExtractor
- JSONFlattener
- JSONFormatter
- JSONFragmenter
- JSONTemplater
- JSONUpdater
- JSONValidator
- KafkaConnector
- MQTTConnector
- OneDriveConnector
- OpenAPICaller
- ParameterFetcher
- ProjectWiseWSGConnector
- RabbitMQConnector
- RasterPyramider
- RekognitionConnector
- S3Connector
- SalesforceConnector
- SharePointListAttachmentConnector
- SharePointOnlineConnector
- SlackConnector
- SNSSender
- SQSConnector
- TCPIPReceiver
- TCPIPSender
- TrelloConnector
- TrimbleConnectConnector
- TrimbleUnityConnector
- WebMapTiler
- WebSocketConnector
- XMLAppender
- XMLFeatureMapper
- XMLFlattener
- XMLFormatter
- XMLFragmenter
- XMLNamespaceDeclarer
- XMLSampleGenerator
- XMLTemplater
- XMLUpdater
- XMLValidator
- XMLXQueryExploder
- XMLXQueryExtractor
- XMLXQueryUpdater
- XSLTProcessor

Category: Workflows

Transformers that control workflow, performing tasks such as data reading and writing, database queries, feature routing, logging and inspection, handling of variables and parameters, and external calls.

- ArcGISAttachmentConnector
- ArcGISBranchVersionManager
- ArcGISOnlineConnector
- AttributeFileReader
- AttributeFileWriter
- AutodeskBIM360DocsConnector
- AutodeskDocsConnector
- AzureBlobStorageConnector
- AzureFileStorageConnector
- AzureQueueStorageConnector
- AzureServiceBusConnector
- BoxConnector
- CKANConnector
- Cloner
- Creator
- DatabaseDeleter
- DatabaseQuerier
- DatabaseUpdater
- Decelerator
- DropboxConnector
- EnvironmentVariableFetcher
- FeatureHolder
- FeatureReader
- FeatureTypeExtractor
- FeatureWriter
- FMEFlowJobSubmitter
- FMEFlowNotifier
- FMEFunctionCaller
- FTPCaller
- GeometryExtractor
- GeometryReplacer
- GoogleCloudStorageConnector
- GoogleDriveConnector
- HDFSConnector
- HTMLExtractor
- HTTPCaller
- IBMMQConnector
- ImageFetcher
- InlineQuerier
- Inspector
- Junction
- Logger
- LogMessageStreamer
- OneDriveConnector
- OpenAPICaller
- ParameterFetcher

- Player
- ProjectWiseWSGConnector
- PythonCaller
- PythonCreator
- RabbitMQConnector
- RasterCheckpointer
- Recorder
- S3Connector
- SalesforceConnector
- Sampler
- SchemaMapper
- SchemaScanner
- SharePointListAttachmentConnector
- SharePointOnlineConnector
- SlackConnector
- Sorter
- SpatialSorter
- SQLCreator
- SQLExecutor
- SummaryReporter
- SystemCaller
- TCPIPReceiver
- TCPIPSender
- TempPathnameCreator
- Terminator
- TimeWindower
- TransporterReceiver

- TransporterSender
- TrelloConnector
- TrimbleConnectConnector
- TrimbleUnityConnector
- VariableRetriever
- VariableSetter
- WebSocketConnector
- WorkspaceRunner
- XSLTProcessor

List of Transformers

Symbol Reference

NEW Transformers with this symbol are new in this version of FME.

⬡ Transformers with this symbol are downloadable from [FME Hub](#).

Transformer	Transformer Summaries
2DArcReplacer	Replaces or creates feature geometry with a 2D arc as defined in parameters for center point, radii, angles, and rotation.
2DBoxReplacer	Replaces feature geometry with a 2D box defined by specified minimum and maximum x and y values.
2DEllipseReplacer	Replaces or creates feature geometry with a 2D ellipse as defined in parameters for center point, radii, and rotation.
2DForcer	Removes z coordinates from features.
2DGridAccumulator	Creates a regular grid of points or rectangular polygons that span the extents of all input features.
2DGridCreator	Creates a regular grid of points or rectangular polygons of a specified size, position, and coordinate system.
3DAffiner	Performs a 3D affine transformation (such as offset, rotate, or scale) on the coordinates of the feature.
3DArcReplacer	Replaces the geometry of the feature with a three-dimensional arc whose shape is set by the parameters, which can be either constant floating point values or the values of existing attributes.
3DForcer	Adds z coordinates to features, creating or modifying 3D geometry.

Transformer	Transformer Summaries
3DInterpolator	Interpolates elevation values along a non-aggregated linear feature from a starting value to an ending value.
3DRotator	Rotates features according to the right hand rule, and in a counter-clockwise direction about the specified axis of rotation.
NEW 3DSlicer	Slices geometry along a specified plane.
Affiner	Performs an affine transformation (such as offset, rotate, or scale) on the coordinates of the feature.
AffineWarper	Performs warping operations on the spatial coordinates of features. It is used to adjust a set of observed input features according to a spatial transform defined by a set of control vectors.
AggregateFilter	Routes features differently depending on if their geometry consists of an aggregate of several geometries, or if it is a simple, single piece geometry.
Aggregator	Combines feature geometries into heterogeneous or homogeneous aggregates. Alternatively, combines feature attributes without any geometry.
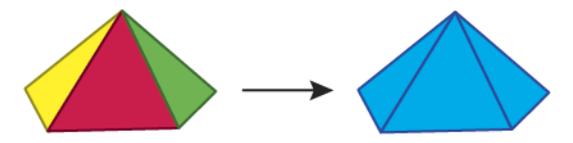
Transformer	Transformer Summaries
AnchoredSnapper	Brings lines, segments, end points or vertex points of features together if they are within a certain distance of each other, where one set of features is non-moving.
AngleConverter	Converts angles of a feature's geometry and/or attributes from one representation to another.
AngularityCalculator	Calculates the "angularity" of a linear or area feature. Angularity indicates the degree of curvature of a feature. The higher the value, the more curved its geometry.
AppearanceExtractor	Extracts appearance style(s) from the front and/or back side of the geometries.
AppearanceMerger	Sets the front and/or back appearance style(s) of specified geometries to be identical to a specific source geometry.
AppearanceRemover	Removes appearances from the front and/or back side of geometries.
AppearanceSetter	Sets appearance style(s) onto the front and/or back sides of geometries.
AppearanceStyler	Creates an appearance style that can later be applied to a surface.
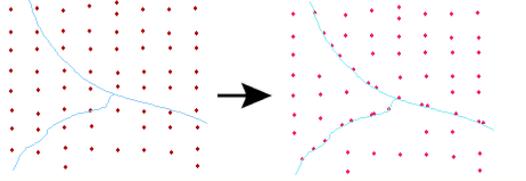
Transformer	Transformer Summaries
ArcEstimator	Replaces geometry with an arc described by the first, middle, and last vertices of the input feature.
ArcGISGridSnapper	Simulates the Geodatabase conversion on a feature by snapping its vertices to a grid based on the associated feature class' storage resolution and origin.
ArcPropertyExtractor	Extracts the properties of arc geometry, storing the resulting values as attributes.
ArcPropertySetter	Modifies or creates arc geometry according to new coordinates, angles, radii, or rotation values.
ArcStroker	Replaces arc or ellipse geometry with interpolated straight line segments.
AreaAmalgamator	Generalizes area geometry by connecting and combining neighboring features and/or filling in holes and details.
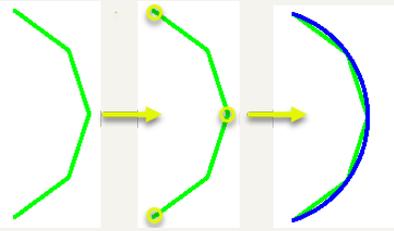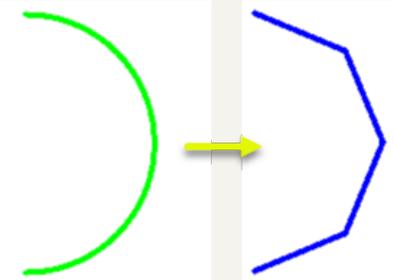
Transformer	Transformer Summaries
AreaBuilder	Creates polygons from topologically correct linear features.
AreaCalculator	Calculates the planar or sloped area of polygon geometries and adds the results as attributes.
AreaGapAndOverlapCleaner	Repairs area topologies by resolving gaps and overlaps between adjacent areas.
AreaOnAreaOverlayer	Overlays areas on areas, intersecting geometry and sharing attributes.
AttributeCompressor	Compresses and (optionally) encrypts the values of the specified attributes. The compressed and encrypted attribute values can be decompressed and decrypted using the AttributeDecompressor.
AttributeCopier	Copies existing attributes to new attributes with user-specified names. The existing attribute remains intact and a new attribute is created that has a different name, but the same values.
AttributeCreator	Adds attributes to features, optionally assigning values. Values may reference adjacent features.
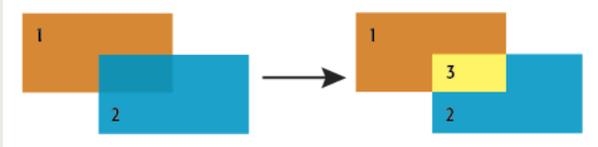
Transformer	Transformer Summaries
AttributeDecompressor	Decompresses and decrypts the values of the specified attributes that were compressed by the AttributeCompressor.
AttributeDereferencer	Sets an attribute value by following a reference from one attribute to another, where the first attribute contains the name of the desired (second) attribute. The referenced value is retrieved and assigned to a new attribute.
AttributeEncoder	Encodes the values of the specified attributes to the desired encoding. If the incoming attribute is Null, the type of the attribute will be set to the desired encoding but the output value will be Null.
AttributeExploder	Creates value pairs (attribute name and attribute value) for every attribute on a feature, and either adds them to a list attribute or creates new features (one for each pair) with new attributes containing both values.
AttributeExposer	Exposes attributes so they can be accessed by downstream transformers and writers.
AttributeFileReader	Reads the contents of an external text or binary file and attaches it to a feature as the value of an attribute.
AttributeFileWriter	Writes the contents of an attribute to a text or binary file.
AttributeFilter	Routes features to different output ports depending on the value of an attribute. The set of possible attribute values can be entered manually, or extracted from an input source in the properties dialog.
AttributeKeeper	Removes all attributes and list attributes, except the specific ones you specify to be retained.

Transformer	Transformer Summaries
AttributeManager	Alters one or more attributes by adding, renaming, copying, deleting or re-ordering. Sets values for new, existing, and modified attributes to any combination of constants, attribute values, conditionals, expressions, and parameters. Values can reference adjacent features.
AttributePivoter	Restructures and regroups incoming features based on specified Group By attributes and calculates summary statistics to form a Pivot table output.
AttributeRangeFilter	Routes features based on user-defined numeric value ranges.
AttributeRangeMapper	Classifies features according to user-defined numeric value ranges, adding a new attribute containing the name of the range it falls within.
AttributeRemover	Removes the selected attributes and list attributes from the feature.
AttributeRenamer	Renames one or more attributes, retaining the attribute's current values.
AttributeReprojector	Reprojects x and y coordinates stored as attributes from one coordinate system to another.
AttributeRounder	Rounds off attributes with numeric values to the specified number of decimal places. Rounding may be nearest, up, or down.
AttributeSplitter	Splits attribute values into parts, based on a delimiter or fixed-width pattern, and creates a list attribute containing one list element for each part.

Transformer	Transformer Summaries
AttributeTrimmer	Removes specified leading and trailing characters from selected attributes.
AttributeValidator	Validates any number of attributes against user-defined test conditions, routing the feature according to the outcome of the test(s) and identifying any tests it has failed.
AttributeValueMapper	Compares attribute values to a lookup table and assigns new values where matches are found. Mapped values may be stored in a new attribute, or overwrite an existing attribute, including the original source.
BaseConverter	Converts an attribute's value from one numeric system (base) to another, putting the resulting value in a new attribute.
BinaryDecoder	Decodes Base64, Base64URL, or HEX text to binary data.
BinaryEncoder	Encodes binary data to text using Base64, Base64URL, or HEX encoding methods.
BoundingBoxAccumulator	Creates a rectangular polygon that spans the extents of all input features.
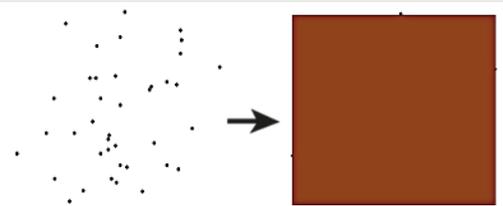
Transformer	Transformer Summaries
BoundingBoxReplacer	Replaces feature geometry with a box or cube that spans the extents of the feature.
BoundsExtractor	Extracts a feature's minimum and maximum coordinate values into attributes.
BoxConnector	Connects to the Box file storage service to manage files and folders.
Bufferer	Creates a buffer zone of specified size around or inside input geometry.
BulkAttributeRemover	Removes all attributes with names that match a given regular expression. This transformer can be used to remove large numbers of attributes that have common naming patterns.
BulkAttributeRenamer	Renames attributes by adding or removing prefixes or suffixes, or replacing text using regular expressions or character strings. This transformer is useful if you need to quickly rename all (or many) of your attributes.
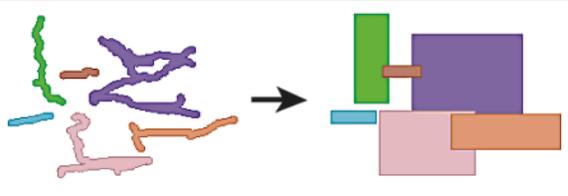
Transformer	Transformer Summaries
CenterlineReplacer	Replaces area geometry with its centerline or straight skeleton.
CenterPointExtractor	Extracts the coordinates of a point located within the feature, its bounding box, or at its center of mass, and stores them as attributes.
CenterPointReplacer	Replaces feature geometry with a point located within the feature, its bounding box, or at its center of mass.
ChangeDetector	Detects changes between two sets of input features.
CharacterCodeExtractor	Extracts the character code of the first character in the input string attribute, and adds its integer value in the character set to the feature as another attribute.
CharacterCodeReplacer	Sets the result attribute to the character whose numeric code was contained in the source code attribute (or the entered integer).
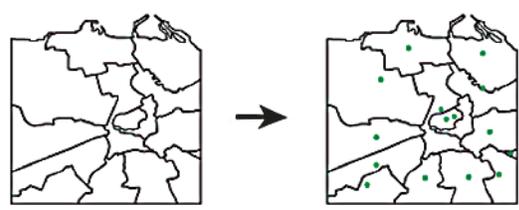
Transformer	Transformer Summaries
ChartGenerator	Creates a raster Line, Bar, Scatter, Histogram or Pie chart based on the values of selected attributes, featuring an interactive interface that allows the user to preview selected features with sample data while designing the layout of their chart.
Chopper	Chops line, arc, path, or area features into smaller features based on number of vertices or approximate length.
CircularityCalculator	Calculates the "circularity" of an area feature, which indicates how elongated the feature is.
Classifier	Sorts and groups features into a number of classes based on an attribute value, storing their class ID in a specified output attribute.
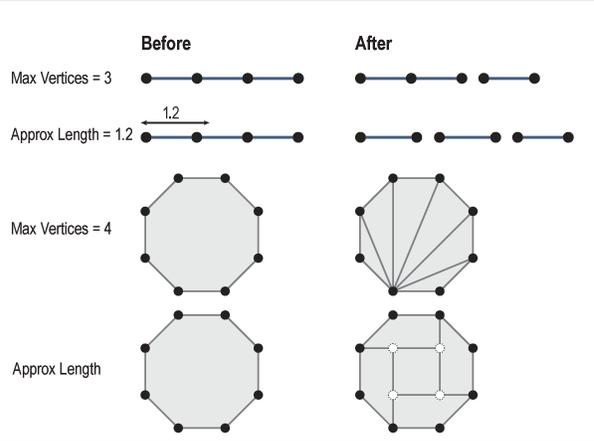
Transformer	Transformer Summaries
Clipper	Divides Candidate features using Clipper features, so that Candidates and parts of Candidates that are inside or outside of the Clipper features are output separately. Attributes may be shared between objects (spatial join).
Cloner	Makes the specified number of copies of the input features and outputs all copies through its single output port.
ClosedCurveFilter	Checks if curves form closed loops.
CommonLocalReprojector	Reprojects one or more features to a local coordinate system centered on the bounding box containing all features.
CommonSegmentFinder	Identifies Candidate features with any line segment in common with any Base feature.
ContourGenerator	Constructs a Delaunay triangulation based on input points and breaklines. Contour lines are then generated from the triangulation.
ConvexityFilter	Determines whether areas, surfaces, and solids are convex or concave.
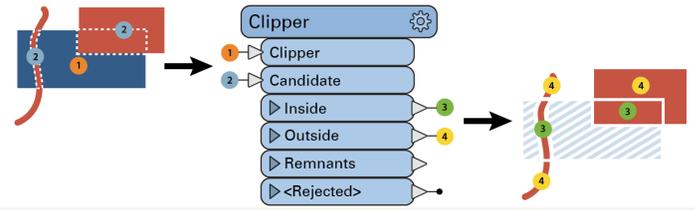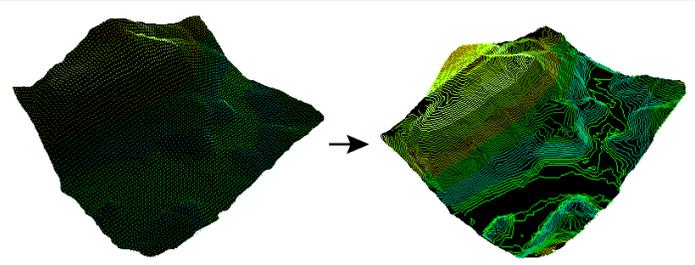
Transformer	Transformer Summaries
CoordinateConcatenator	Retrieves the values of all the feature's coordinates into a single string attribute value, separated by delimiters.
CoordinateExtractor	Retrieves either specified individual coordinates or all coordinate values from geometry, adding them to the feature as attributes.
CoordinateRounder	Rounds off the coordinates of the feature to the specified number of decimal places.
CoordinateSwapper	Swaps coordinate axes of the input features.
CoordinateSystemDescription Converter	Looks up coordinate system names and definitions between FME's internal format and common third-party and open source representations, storing the results as an attribute.
CoordinateSystemExtractor	Retrieves the name of the feature's assigned FME coordinate system into an attribute.
CoordinateSystemRemover	Removes the assigned coordinate system from features, without modifying geometry or coordinates.
CoordinateSystemSetter	Assigns a user-specified coordinate system to features, without modifying geometry or coordinates.
Counter	Adds a numeric attribute to a feature and assigns a value. Each subsequent feature passing through the transformer receives an incremented value, counting the features.
CRCCalculator	Calculates a CRC (Cyclic Redundancy Check) value for a feature and places the calculated CRC value into the attribute specified.

Transformer	Transformer Summaries
Creator	Creates features using the parameters supplied, and sends them into the workspace for processing.
CSGBuilder	Creates Constructive Solid Geometry (CSG) from pairs of solid geometry features which are input through the A and B ports.
CSGEvaluator	Recursively replaces the geometry of a feature that has CSG (Constructive Solid Geometry) by evaluating the tree of the CSG solid, effectively removing the constructive aspect of the geometry.
CsmapAttributeReprojector	Reprojects coordinates stored as attributes from one coordinate system to another using the CS-MAP library.
CsmapReprojector	Reprojects feature coordinates from one coordinate system to another using the CS-MAP library.
Curvefitter	Replaces geometry with an optimal path of line segments and arcs, creating smooth, curving lines and areas.
DatabaseDeleter	Delete rows in a database table based on the condition specified.
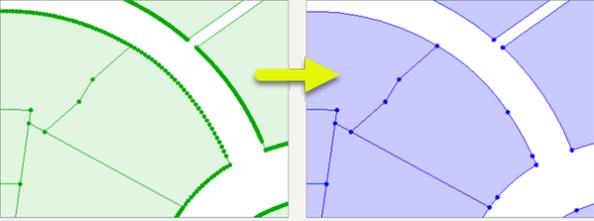
Transformer	Transformer Summaries
DatabaseJoiner	Joins attributes from an external table to features already in a workspace, based on a common key or keys.
NEW DatabaseQuerier	Executes queries against a database, producing query results and/or schema.
DatabaseUpdater	Update fields in a database table based on the condition specified.
DateTimeCalculator	Performs arithmetic on date, time, datetime, and interval values.
DateTimeConverter	Converts a set of input date/time attributes from one format to another, in place.
DateTimeRounder	Rounds a DateTime value's day, hour, minute, second, millisecond, microsecond, or nanosecond to a specified interval.
DateTimeStamper	Adds the current date, time, or both as an attribute, in either local or UTC time.
Deaggregator	Decomposes an aggregate feature into its components.
Decelerator	Slows down the flow of features through the workspace.
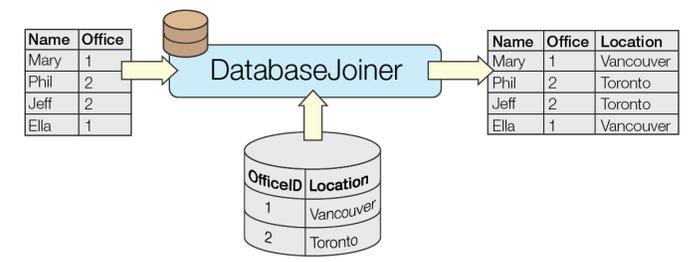
Transformer	Transformer Summaries
DecimalDegreesCalculator	Calculates a decimal degree value from separate degrees, minutes, and seconds (DMS) values, provided as attributes.
DEMDistanceCalculator	Calculates the distance between a number of input vector lines and the elevation values of a reference DEM raster, and outputs a new DEM raster per input line.
DEMGenerator	Constructs a Delaunay triangulation based on input points and breaklines. That triangulation is then uniformly sampled to produce a digital elevation model (DEM points).
Densifier	Adds vertices to linear features at regular intervals.
DensityCalculator	Determines the density of a group of Candidate features.
DGNStyler	Prepares features for output to Bentley Microstation Design V7/V8 by providing a convenient interface to set a variety of Bentley Microstation Design format-specific attributes.
DimensionExtractor	Extracts a feature's number of dimensions, storing the resulting value of 2 or 3 in an attribute.
Displacer	Solves proximity conflicts between features using a variant of the Nickerson displacement algorithm. This transformer is usually used after generalization.
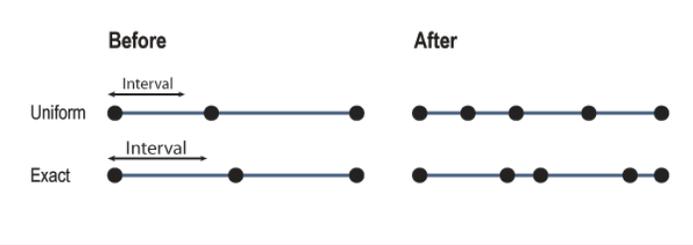
Transformer	Transformer Summaries
Dissolver	Combines overlapping and/or adjacent areas into larger contiguous areas by removing shared and interior edges.
DMSCalculator	Calculates degrees, minutes, and seconds (DMS) from a decimal degrees value provided as an attribute.
DonutBridgeBuilder	Adds internal edges to connect donut holes to the outer shell, producing a non-donut polygon.
DonutBuilder	Cuts holes in area features where they fully enclose another area, creating donut polygons.
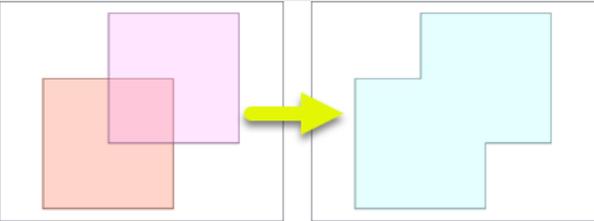
Transformer	Transformer Summaries
DonutHoleExtractor	Separates donut polygons into outer shell and hole polygons.
DuplicateFilter	Detects duplicate features based on the value of one or more key attributes.
DWGStyler	Prepares features for output to AutoCAD DWG/DXF by providing a convenient interface to set a variety of AutoCAD DWG/DXF format-specific attributes.
ElevationExtractor	Extracts a feature's first z coordinate value, storing it in an attribute.
EllipsePropertyExtractor	Extracts the properties of ellipse geometry, storing the resulting values as attributes.
EllipsePropertySetter	Modifies or creates ellipse geometry according to new coordinate, radii, rotation, or orientation values.
EnvironmentVariableFetcher	Fetches the specified environment variable and includes it in a new attribute.
EsriReprojector	Reprojects feature coordinates from one coordinate system to another using the Esri reprojection engine.
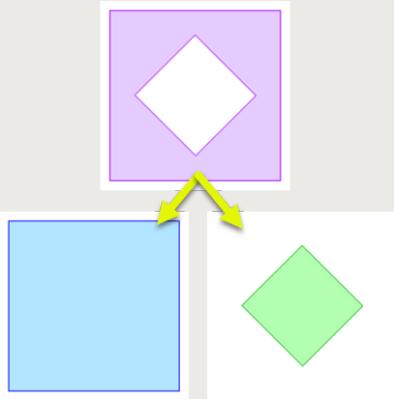
Transformer	Transformer Summaries
NEW ExcelConditionalFormatter	Sets conditional rules and styles on features destined for Excel formats.
ExcelStyler	Sets row and cell styling on features destined for Excel formats.
ExpressionEvaluator	Performs a mathematical calculation on an expression that consists of FME Feature Functions, String Functions, Math Functions, and Math Operators. The operands and function arguments consist of attributes on the input feature, constant literals, user parameters, as well as functions and operators.
Extruder	Creates line, surface or solid geometries with a fixed cross-sectional profile taken from the original geometry of the feature.
FaceReplacer	Replaces the geometry of a feature from donut, raster, or polygon to face. If the donut or polygon is not already three-dimensional, a 0.0 value for Z coordinates is assumed.
FeatureColorSetter	Assigns colors to incoming features.
FeatureHolder	Stores incoming features until they have all arrived, and then releases them in their original order.

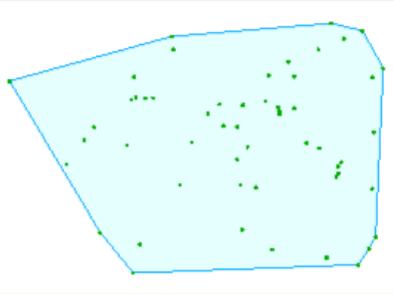| Transformer	Transformer Summaries
FeatureJoiner	Joins features by combining the attributes and/or geometry of features based on common key attribute values. Performs Left, Inner, and Full joins.
FeatureMerger	Merges the attributes and/or geometries of one set of features onto another set of features, based on matching key attribute values and expressions.
FeatureReader	Reads features from any FME-supported format.
FeatureTypeExtractor	Adds an attribute containing the original feature type of a feature.
FeatureTypeFilter	Routes features to different output ports based on their incoming feature type.
FeatureWriter	Writes features to any FME-supported writer.
FilenamePartExtractor	Extracts specified parts of a filename path and returns the results as string attributes.
FMEFlowJobSubmitter	Submits FME jobs to be run on FME Flow. A job consists of a workspace (housed within a repository on FME Flow) together with values for each of its user parameters.
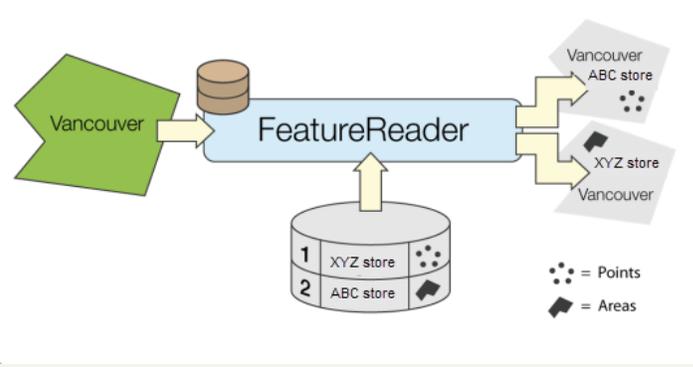
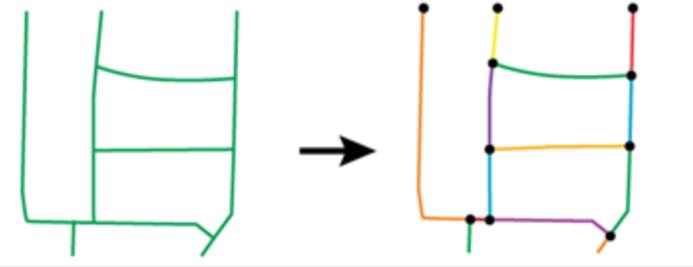| Transformer	Transformer Summaries
FMEFlowNotifier	Sends a notification to a specified FME Flow instance.
FMEFunctionCaller	Calls a specified FME function, optionally storing the resulting value in an attribute.
FTPCaller	Uploads and downloads data from an FTP server.
Generalizer	Simplifies, smoothes, measures, or fits geometry according to a variety of algorithms.
GeometryCoercer	Resets the geometry type of the feature.
GeometryColorSetter	Sets colors, via appearances, on geometries (such as surfaces) that support appearances, and match a Geometry XQuery. Random Randomize by Trait
NEW GeometryCopier	Copy a feature's geometries onto itself to create a feature with multiple geometries.
NEW GeometryExposer	Exposes geometry names so they can be accessed by downstream transformers and writers.
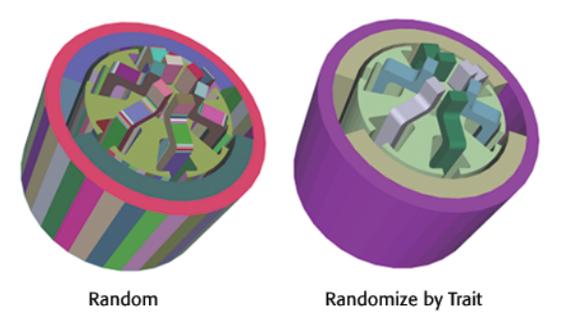
Transformer	Transformer Summaries
GeometryExtractor	Extracts geometries of a feature according to the setting of the geometry encoding parameter and the geometry selected.
GeometryFilter	Routes features based on their geometry type.
GeometryInstantiator	Replaces a geometry definition with independent geometry instances that are copies of the original geometry definition.
NEW GeometryNameExtractor	Extracts geometry names to an attribute.
NEW GeometryNameSetter	Sets specified geometry name from feature attribute or constant.
GeometryPartCounter	Returns the number of parts in the geometry. For multis and aggregates, this is the number of parts, and for paths, this is the number of segments. Otherwise, it is 1.
GeometryPartExtractor	Extracts selected geometry parts based on a Geometry XQuery.
GeometryPropertyExtractor	Extracts selected geometry labels or traits to feature attributes.
GeometryPropertyRemover	Removes selected geometry labels or traits.
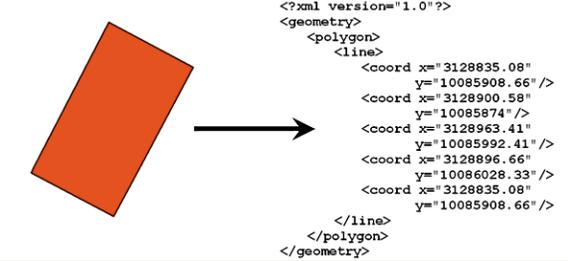
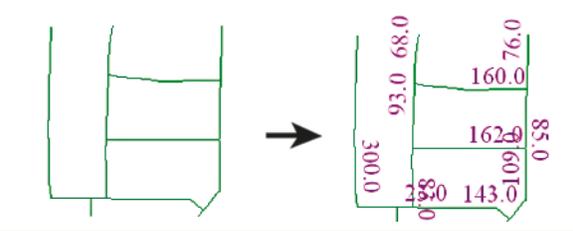| Transformer	Transformer Summaries
GeometryPropertyRenamer	Renames traits and changes the values of geometry labels.
GeometryPropertySetter	Sets selected geometry labels or traits from feature attributes or constants.
GeometryRefiner	Performs refinements on features geometry.
GeometryRemover	Removes geometries from features.
GeometryReplacer	Replaces the geometry of a feature according to the setting of the geometry encoding parameter. This transformer is typically used to restore geometry previously extracted into an attribute by the GeometryExtractor.
GeometryValidator	Detects selected issues in input features, and optionally repairs detected issues.
GeoRSSFeatureComposer	Constructs GeoRSS documents from the input features and stores them in the specified attribute for the features that are output by the GeoRSS port.
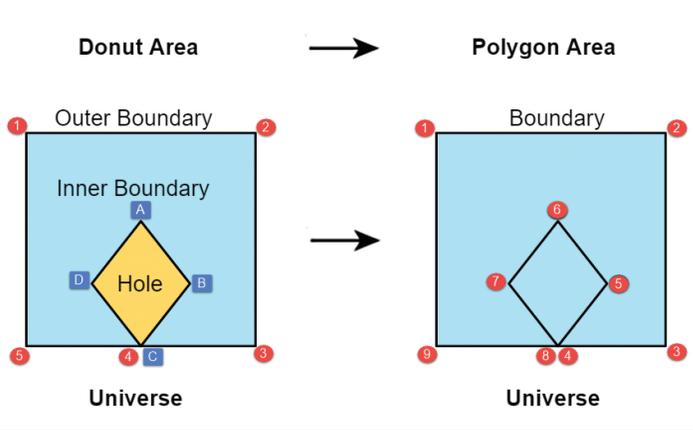
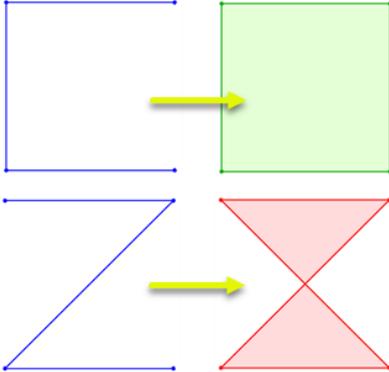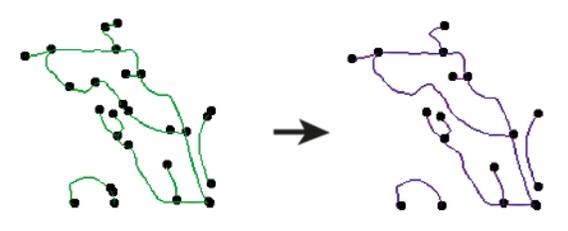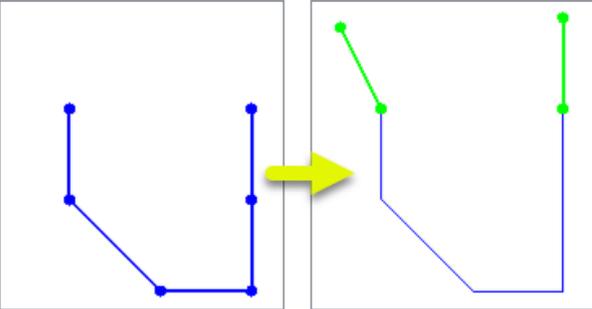| Transformer	Transformer Summaries
GeoRSSFeatureReader	Constructs features out of GeoRSS documents/URLs that are stored in a specified attribute of the input features. The features from the GeoRSS document/URL are output with the attributes from the original feature and are merged, if desired.
GMLFeatureComposer	Writes out GML features corresponding to feature types from existing GML application schema.
GOIDGenerator	Calculates a GOID (Geographic Object IDentifier) for each incoming feature, and adds it as a new attribute.
GoogleDriveConnector	Connects to Google Drive to manage files and folders.
GridInQuestIIReprojector	Reprojects feature coordinates from one coordinate system to another using the Grid InQuestII engine from Ordnance Survey, for use in Great Britain, Ireland, and Northern Ireland.
GtransAttributeReprojector	Reprojects coordinates stored as attributes from one coordinate system to another using the Gtrans reprojection engine from the National Land Survey of Sweden (Lantmäteriet).
GtransReprojector	Reprojects feature coordinates from one coordinate system to another using the Gtrans reprojection engine from the National Land Survey of Sweden (Lantmäteriet).
H3HexagonalIndexer	Computes and manipulates hexagonal hierarchical spatial indexes (Uber H3), and enables spatial data to be grouped into hexagonal grid cells for analysis and visualization.
HDFSConnector	Connects to an HDFS (Hadoop Distributed File System) to manage files and folders.

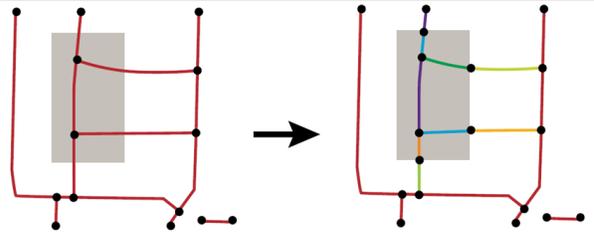| Transformer	Transformer Summaries
HoleCounter	Retrieves the number of holes in donut polygons, storing the result as an attribute.
HTMLExtractor	Extracts structured data from web page or other HTML sources that are formatted for human readability (screen scraping), using CSS selectors to extract portions of HTML content into feature attributes.
HTMLLayouter	Allows users to combine web reports generated by the HTMLReportGenerator into a bootstrap grid or vertical layout.
HTMLReportGenerator	Allows users to create a basic web report of vertically-stacked elements using the geometry and selected attributes from features.
HTMLToXHTMLConverter	Converts HTML document into valid XHTML document.
HTTPCaller	Accesses a URL via HTTP or HTTPS, using a variety of HTTP methods.
HullAccumulator	Creates a convex or concave hull based on a group of input features.
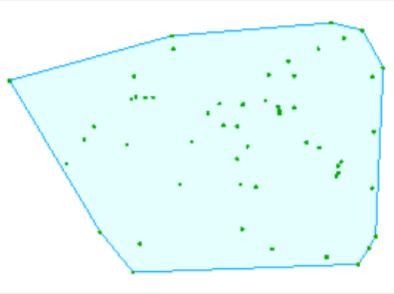
Transformer	Transformer Summaries
HullReplacer	Replaces feature geometry with a convex or concave hull around the feature.
IFCPropertySetDefinition Creator	Creates a feature whose attributes contain the definition of an IFC property set. The features output from this transformer are similar to the PropertySetDefinition features produced by the IFC reader.
IFCQuantitySetDefinition Creator	Creates a feature whose attributes contain the definition of an IFC quantity set. The features output from this transformer are similar to the QuantitySetDefinition features produced by the IFC reader.
ImageFetcher	Retrieves an image from a URL and outputs a raster feature.
ImageRasterizer	Creates a raster representation of vector or point cloud input features.
InlineQuerier	Creates SQLite database tables from incoming features, executes SQL queries against them, and outputs the results as features.
Inspector	Sends features to the FME Data Inspector for display.

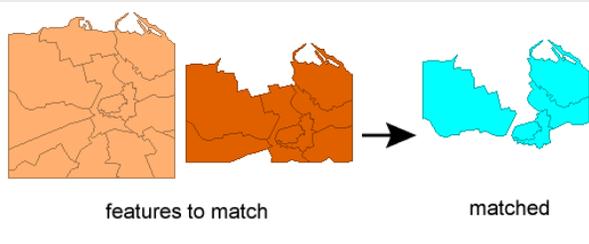| Transformer	Transformer Summaries
Intersector	Computes intersections between all input features, breaking lines and polygons wherever an intersection occurs and creating nodes at those locations.
JMSReceiver	Using the Java Message System (JMS), receives messages from a message broker.
JMSSender	Using the Java Message System (JMS), sends messages to a message broker.
NEW JSONAppender	Assembles multiple JSON fragments into a single JSON document.
JSONExtractor	Extracts portions of JSON (JavaScript Object Notation) formatted text into feature attributes.
JSONFlattener	Flattens JSON (JavaScript Object Notation) objects, extracting the object keys and values into FME feature attributes.
JSONFormatter	Provides options for formatting JSON (JavaScript Object Notation) text.
JSONFragmenter	Extracts portions of JSON (JavaScript Object Notation) formatted text into new FME features.

Transformer	Transformer Summaries
JSONTemplater	Populates a JSON document with FME feature attribute values. The document is provided as a template, and the transformer will use XQuery to insert attribute values and geometry information into the template.
JSONUpdater	Modifies JSON documents.
JSONValidator	Validates the syntax of JSON (JavaScript Object Notation) text.
Junction	Brings multiple connections together at a junction point, which outputs a single connection.
KinesisReceiver	Using the Amazon Kinesis service, receives data records from an Amazon Kinesis stream.
KinesisSender	Using the Amazon Kinesis service, sends data records to an Amazon Kinesis stream.
KMLPropertySetter	Sets common properties for groups of vector and raster features destined for the OGCKML Writer.
KMLRegionSetter	Sets the region-related KML attributes for a group of features destined for the OGCKML Writer.
KMLStyler	Creates a common style for a group of features destined for the OGCKML writer.
KMLTimeSetter	Sets the time-related KML attributes for a group of features destined for the OGCKML Writer.
KMLTourBuilder	Generates a KML Tour from input features. The tour consists of tour stops that correspond to each input feature.

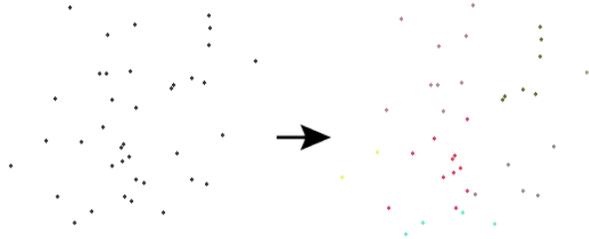| Transformer	Transformer Summaries
KMLViewSetter	Sets the view-related KML attributes for a group of features destined for the OGCKML Writer. Creation of LookAt or Camera views are supported.
Labeler	Places labels along a linear feature, angled to the orientation of each labeled segment.
LabelPointReplacer	Replaces point, line, or area geometry with a single text label.
LatLongToMGRSConverter	Calculates a Military Grid Reference System (MGRS) code based on latitude and longitude values.
LeftRightSpatialCalculator	Computes relative position of Candidate input features relative to Base input features.
LengthCalculator	Calculates the length of a feature and adds it as a new attribute.
LengthToPointCalculator	Calculates the length of a feature from its start until the closest spot to a point, and adds it as a new attribute. The point coordinates are taken from attributes in the original feature.

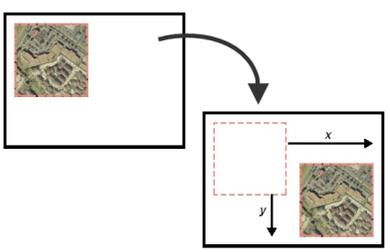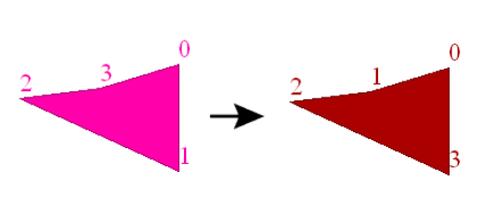| Transformer	Transformer Summaries
LineBuilder	Connects sequential point and/or line features to create line or area geometry.
LineCloser	Converts a linear feature to an area by connecting the end point to the start point.
LineCombiner	Connects line features that meet at common start or end points to create longer lines or paths.
LineExtender	Extends line, arc, or path features at both ends by a specified length.

Transformer	Transformer Summaries
LineOnAreaOverlayer	Overlays lines and areas, intersecting geometry and sharing attributes.
LineOnLineOverlayer	Overlays lines on lines, intersecting geometry, sharing attributes, and producing intersection points.
ListBasedFeatureMerger	Merges the attributes and/or geometries of one set of features onto another set of features, based on matching list attribute values with key attribute values and expressions.
ListBuilder	Combines attributes of the input features into a single list structure.
ListConcatenator	Concatenates all the values of a list into a single attribute.
ListCopier	Copies a complete attribute list, including all nested attributes, from one list name to another.
ListDuplicateRemover	Removes all duplicate values from a list attribute.
ListElementCounter	Stores the number of member elements found in the specified list into an attribute.
ListExploder	Explodes each list member on each input feature out into its own feature.

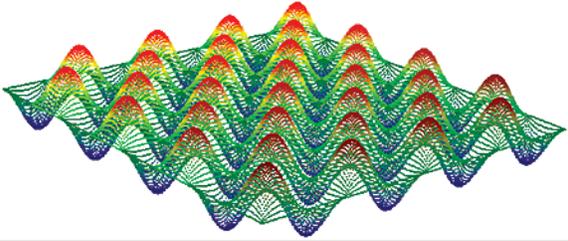| Transformer	Transformer Summaries
ListExpressionPopulator	Populates a new list from a series of attributes. The attributes to be used are specified by the expression parameter. Each attribute's index in the list is specified by the order of the attribute in the sorted result of the regular expression.
ListHistogrammer	Computes a histogram of the values found in a list, and returns these in a new list attribute on the feature.
ListIndexer	Copies the attributes of the list element specified by the index to become main attributes of the feature.
ListPopulator	Populates a new list from a series of attributes.
ListRangeExtractor	Extracts the minimum and maximum values found in a list.
ListRenamer	Renames or promotes list names or components.
ListSearcher	Searches a list to find a value and returns the index of the value in the list.
ListSorter	Sorts the elements of the given list. The sorting can either be alphabetic or numeric, and in either ascending or descending order.
ListSummer	Computes the sum of all the elements of a list.
LocalCoordinateSystemSetter	Assigns a specified local coordinate system to features, without modifying geometry or coordinates.
Logger	Logs each feature to the translation log at the specified severity. All attributes and geometry of the feature will be output.

Transformer	Transformer Summaries
LogMessageStreamer	Captures messages from the FME logfile and/or the Logger transformer. The messages are loaded onto features created by the transformer.
MapboxStyler	Creates a common style for a group of features destined for the GeoJSON writer.
MapInfoStyler	Prepares features for output to MapInfo MIF/MID or MapInfo TAB by providing a convenient interface to set a variety of MapInfo format-specific attributes.
MapnikRasterizer	Generates a raster from input vector and raster features, with fine control over symbolization and labeling, using the Mapnik toolkit.
Matcher	Detects features that are matches of each other. Features are declared to match when they have matching geometry, matching attribute values, or both. A list of attributes which must differ between the features may also be specified. features to match matched
MeasureExtractor	Extracts the measures of geometries that match the given type, and places them in attributes or list attributes.
MeasureGenerator	Creates a set of measures attached to the geometry of the feature, where each value is the distance from the start of the line up to that vertex, multiplied by the given Multiplier.

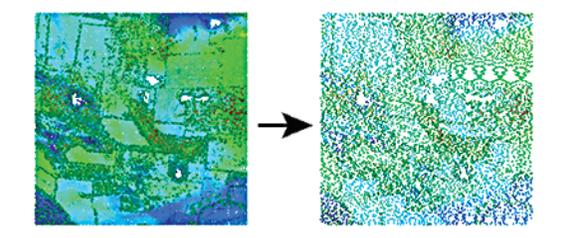| Transformer	Transformer Summaries
MeasureRemover	Removes measures from a feature's geometry.
MeasureSetter	Sets measure(s) on a point, line, arc, area geometry or a vertex of a linear geometry to attribute value(s) of given attribute(s) or list attribute.
MeshMerger	Merges mesh features (features with IFMEMesh geometries) into a single output mesh.
MeshSimplifier	Reduces the number of triangles in a mesh.
MGRSToLatLongConverter	Converts Military Grid Reference System (MGRS) code to longitude and latitude coordinate values.
MinimumAreaForcer	Enlarges features smaller than a specified area to that specified minimum size.
MinimumSpanning CircleReplacer	Calculates a circle containing all vertices of the input feature, output as either attribute values or geometry.
ModuloCounter	Adds an attribute holding the next integer in a sequence, restarting the count at 0 whenever the sequence reaches the specified maximum value.
MultipleGeometryCoercer	Splits an aggregate into multiple geometry columns, with one column for each part of the original aggregate.
MultipleGeometryFilter	Filters aggregate features based on the type of aggregate.
NeighborFinder	Finds the nearest Candidate feature(s) to each Base feature and merges their attributes onto the Base feature. May also be used in Candidates Only mode, where each feature is considered the Base in turn and compared to all other features, but not itself.

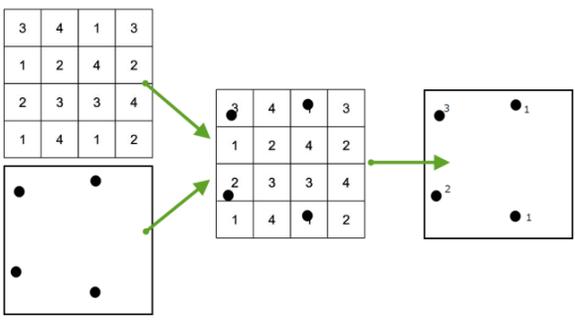| Transformer	Transformer Summaries
NeighborhoodAggregator	Creates aggregates of features based on their proximity to each other. Each aggregate that is created covers approximately the neighborhood width and height (measured in feature ground units).
NeighborPairFinder	Finds the closest two Candidate features within some maximum distance of each Base feature and some minimum separation in heading between the Candidates and the Base.
NetworkCostCalculator	Computes and assigns the cost of the shortest path from a source object to each connected object as the Z-values or measure values of the input features.
NetworkFlowOrientor	Fixes the flow (direction) of each edge or linear feature in the network to fit the downstream direction to the destination node.
NetworkTopologyCalculator	Finds the connected lines that belong to the same network graph.
NullAttributeMapper	Maps specified attributes on a feature to specified values. This transformer can map to and from null values, empty strings, and missing attributes.
NumericRasterizer	Creates a numeric raster representation of vector or point cloud input features, where cell values are taken from the z coordinates of the input features and overlaid on a uniform background.

Transformer	Transformer Summaries
OffsetCurveGenerator	Creates offset parallel lines on either side of curve features.
Offsetter	Adds offsets to the feature's coordinates.
OneDriveConnector	Connects to Microsoft OneDrive to manage files and folders.
NEW OpenAPICaller	Accesses an API endpoint defined by an OpenAPI specification via HTTP or HTTPS.
OrientationExtractor	Returns a feature's orientation.
Orientor	Adjusts the orientation of a polygonal feature, a surface, or the direction of a linear feature.
ParameterFetcher	Adds an attribute to the feature, supplying it the value of a previously defined parameter.
PathBuilder	Connects sequential line and/or arc features to create path geometry, preserving input segments.
PathSplitter	Splits path geometry into its component line and/or arc segments.

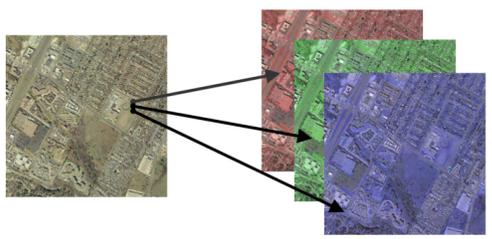| Transformer	Transformer Summaries
PDFPageFormatter	Prepares features for output to PDF by providing a convenient interface to set the scale and location of features on a page.
PDFStyler	Sets the common PDF style attributes for a group of features destined for the GeoSpatial PDF Writer.
PipeEvaluator	Replaces pipe geometries on the feature with an approximated boundary representation solid.
PipeReplacer	Replaces the geometry of the feature with a three-dimensional pipe created by sweeping a stroked disk along the input curve.
PlanarityFilter	Filters features based on their planarity. To be planar, a geometry must have all its points situated in the same plane.
Player	Retrieves features stored in an FME Feature Store (FFS) file and outputs them into the workspace.
PointCloudCombiner	Combines features into a single point cloud. Point cloud and non-point cloud geometries are supported.
PointCloud ComponentAdder	Adds new components with constant values to a point cloud.
PointCloud ComponentCopier	Copies selected component values onto either a new or existing component.
PointCloud ComponentKeeper	Keeps only specified point cloud components, discarding all others.
PointCloud ComponentRemover	Removes specified components from a point cloud.

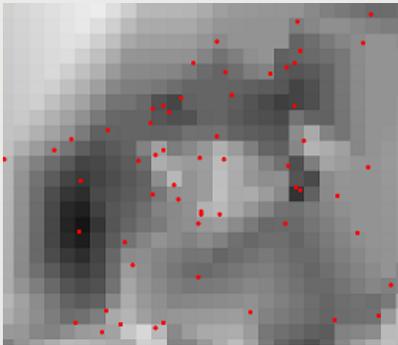| Transformer	Transformer Summaries
PointCloud ComponentRenamer	Renames an existing component.
PointCloud ComponentTypeCoercer	Alters the data type of point cloud components, and converts component values if required.
PointCloudConsumer	Reads point cloud features for testing purposes, including any accumulated point cloud operations. No additional operations are performed, and nothing is done with the features.
PointCloudCreator	Creates a point cloud of specified size and density, with default component values.
PointCloud ExpressionEvaluator	Evaluates expressions on each point in a point cloud feature, including algebraic operations and conditional statements, and sets individual point cloud component values.
PointCloudExtractor	Serializes the geometry of a point cloud feature into a Blob attribute, encoding the contents according to a choice of common binary point cloud formats.
PointCloudFilter	Separates point clouds into multiple features, based on evaluating expressions including component values, and creates a separate output port for each expression defined.

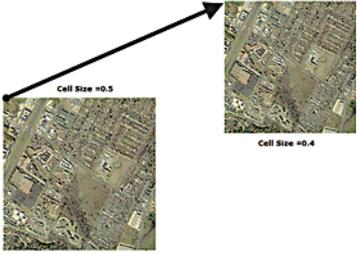| Transformer	Transformer Summaries
PointCloudMerger	Merges point clouds by joining points where selected component values match (join key), including x, y, z, and other components. Component values are transferred between point clouds and output is filtered based on matching success and duplication.
PointCloudOnRaster ComponentSetter	Sets point cloud component values by overlaying a point cloud on a raster. The component values for each point are interpolated from band values at the point location.
PointCloudPropertyExtractor	Extracts the geometry properties of a point cloud feature and exposes them as attributes, optionally checking for their existence, retrieving component properties, and finding minimum and maximum values. Extents may also be recalculated and updated.
PointCloudReplacer	Decodes a binary attribute containing encoded point clouds stored as Blobs, replacing the feature's geometry with the decoded point cloud.
PointCloudSimplifier	Reduces the number of points in a point cloud by selectively keeping points based on the shape of the point cloud. The simplified and removed points are output as two discrete point clouds.
PointCloudSorter	Sorts the points within a point cloud by one or more component values.
PointCloudSplitter	Separates point clouds into multiple features based on component values, color, or first/last return.
PointCloudStatisticsCalculator	Calculates statistics on point cloud components and adds the results as attributes.

Transformer	Transformer Summaries
PointCloudSurfaceBuilder	Takes an input point cloud and reconstructs it into an output mesh.
PointCloudThinner	Reduces the number of points in (thins) a point cloud by keeping points at a fixed interval, a maximum number of points, or a set quantity of first or last points. Remaining points are discarded.
PointCloudToPointCoercer	Converts point clouds to point or multipoint geometries, optionally retaining attribute and component values.
PointCloud TransformationApplier	Applies a point cloud's scale, offset, or transformation matrix to it, recalculating component values and removing the transformation values.
PointOnAreaOverlayer	Overlays points and areas, sharing attributes.
PointOnLineOverlayer	Overlays points on lines, splitting lines and sharing attributes.
PointOnPointOverlayer	Overlays points on points, sharing attributes.

Transformer	Transformer Summaries
PointOnRasterValueExtractor	Extracts the band and palette values from a raster at the location of one or more input points and sets them as attributes on the point feature.
PointPropertyExtractor	Extracts point orientation to feature attributes.
PointPropertySetter	Adds or removes point orientation.
PowerPointStyler	Prepares features for output to the Microsoft PowerPoint Writer by providing a convenient interface to set a variety of Microsoft PowerPoint format-specific attributes.
PROJAttributeReprojector	Reprojects coordinates stored as attributes from one coordinate system to another using the PROJ library.
ProjectWiseWSGConnector	Connects to Bentley ProjectWise to manage files and folders.
PROJReprojector	Reprojects feature coordinates from one coordinate system to another using the PROJ library.
PythonCaller	Executes a user-supplied Python script to manipulate features.
PythonCreator	Creates features with a user-supplied Python script.
RandomNumberGenerator	Generates a uniformly distributed random number.

Transformer	Transformer Summaries
RasterAspectCalculator	Calculates the aspect (direction of slope) for each cell of a raster. Aspect is measured in degrees from 0 to 360, clockwise from north.
RasterBandAdder	Adds a new band to a raster feature.
RasterBandCombiner	Merges coincidental raster features into a single output raster feature, preserving and appending all bands.
RasterBand InterpretationCoercer	Alters the interpretation type of individual raster bands, converting cell values if necessary.
RasterBandKeeper	Removes all unselected bands from a raster feature.
RasterBandMinMaxExtractor	Extracts the minimum and maximum band values, palette keys, and palette values from a raster feature, and adds them to a list attribute.
RasterBandNameSetter	Sets the band name of selected bands on a raster, making raster contents simpler to understand compared to band numbers.
RasterBandNodataRemover	Removes the existing Nodata identifier from selected bands of a raster feature. Any values previously equal to the Nodata value are considered valid data.
RasterBandNodataSetter	Sets a new Nodata value on selected bands of a raster feature.
RasterBandOrderer	Specifies the required order of bands in a raster. Bands are reordered according to the input band indices.
RasterBand PropertyExtractor	Extracts the band and palette properties of a raster feature and adds them to a list attribute.
RasterBandRemover	Removes any selected bands from a raster feature.

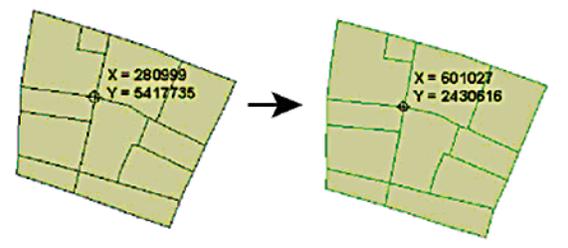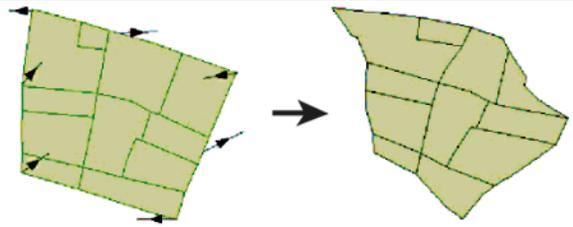| Transformer	Transformer Summaries
RasterBandSeparator	Separates bands or unique band and palette combinations, and outputs either individual raster features or a single new raster feature containing all combinations.
RasterCellCoercer	Creates individual points or polygons for each cell in a raster, optionally extracting band values as z coordinates or attributes.
RasterCellOriginSetter	Sets the cell origin point within cells in a raster.
RasterCellValueCalculator	Evaluates basic arithmetic , minimum, maximum or average operations on the cell values of a pair of rasters.
RasterCellValueReplacer	Replaces ranges of band values in a raster with single values.
RasterCellValueRounder	Rounds off raster cell values.
RasterCheckpointer	Forces accumulated raster operations to be processed, saving the state to disk and releasing resources to tune performance or assist with memory limitations.
RasterConsumer	Reads raster features for testing purposes, including any accumulated raster operations. No additional operations are performed, and nothing is done with the features.

Transformer	Transformer Summaries
RasterConvolver	Applies a convolution filter (sometimes called a kernel or lens) to raster features and outputs the results.
RasterDEMGenerator	Produces a raster digital elevation model (DEM) by uniformly sampling a Delaunay triangulation generated from input points and breaklines.
RasterDiffuser	Enhances the features of a raster image. The RasterDiffuser enhances the borders, lines, and curves while reducing noise in the flat areas of the raster image.
RasterExpressionEvaluator	Evaluates expressions on each cell in a raster or pair of rasters, including algebraic operations and conditional statements.
RasterExtentsCoercer	Replaces the geometry of input raster features with a polygon covering either the extents of a raster or the extent of data within a raster.
RasterExtractor	Serializes the geometry of a raster feature into a Blob attribute, encoding the contents according to a choice of common binary raster formats.
RasterGCPExtractor	Extracts Ground Control Point (GCP) coordinate system and point values from a raster feature and exposes them as attributes.

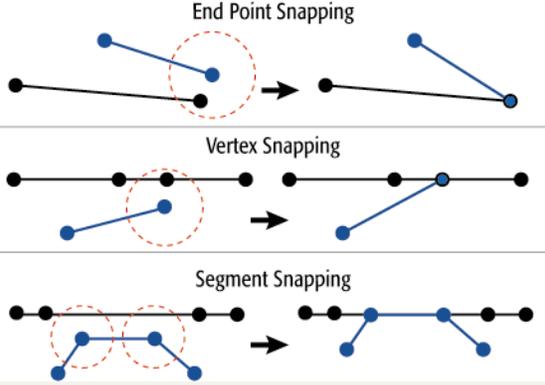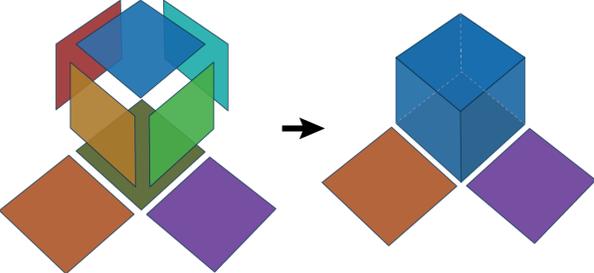| Transformer	Transformer Summaries
RasterGCPSetter	Sets Ground Control Points (GCPs) on a raster, pairing cell positions with known coordinates.
RasterGeoreferencer	Georeferences a raster by either known corner coordinates or origin, cell size, and rotation.
RasterHillshader	Generates a grayscale shaded relief representation of terrain, based on elevation values.
RasterInterpretationCoercer	Alters the interpretation type of rasters, including all bands, and converts cell values if necessary.
RasterMosaicker	Merges multiple raster features into a single raster feature.
RasterNumericCreator	Creates a numeric raster of specified size and resolution, with default cell values.
RasterPaletteAdder	Creates a palette from an attribute, and adds this palette to all selected bands on a raster.
RasterPaletteExtractor	Creates a string representation of an existing palette on a raster and saves it to an attribute.

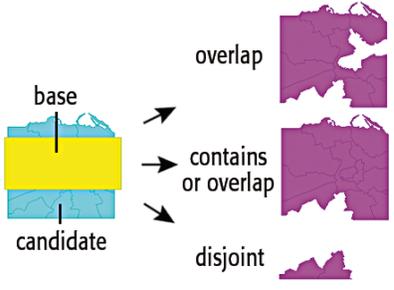| Transformer	Transformer Summaries
RasterPaletteGenerator	Generates a palette from the selected band(s) of a raster. The output raster will have the selected band(s) replaced by a new band with a palette.
RasterPalette InterpretationCoercer	Alters the interpretation type of raster palettes.
RasterPalette NodataSetter	Identifies the palette key that matches a raster band's Nodata value, and sets a value on it.
RasterPaletteRemover	Removes selected palette(s) from raster features.
RasterPaletteResolver	Resolves the palette(s) on a raster by replacing cell values with their corresponding palette values. Palette values with multiple components, such as RGB, are broken down and the individual values assigned to multiple, newly-added bands.
RasterPropertyExtractor	Extracts the geometry properties of a raster feature and exposes them as attributes.
RasterPyramider	Resamples rasters to multiple resolutions, based on either number of levels or dimensions of the smallest output raster.
RasterRegisterer	Transforms an image to minimize its difference with another.
RasterReplacer	Decodes a binary attribute containing encoded rasters stored as Blobs, replacing the feature's geometry with the decoded raster.

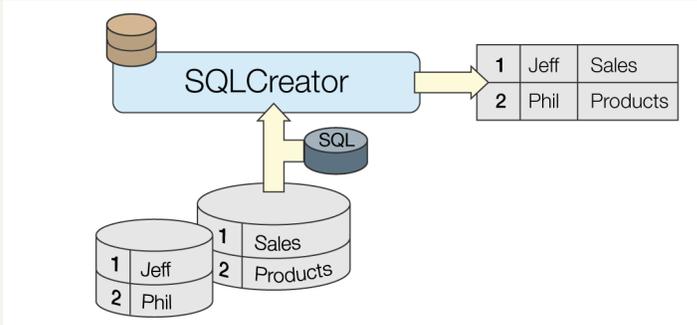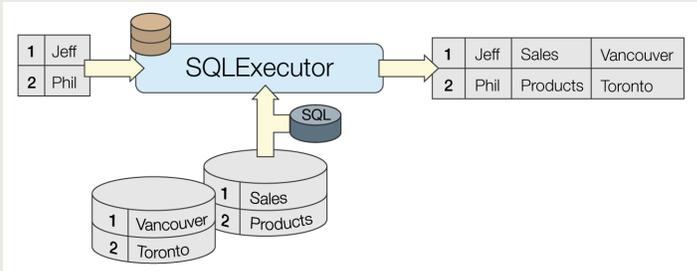| Transformer	Transformer Summaries
RasterResampler	Resamples rasters, based on specified output dimensions, cell size in ground units, or percentage of original, by interpolating new cell values.
RasterRGBCreator	Creates a color raster feature of specified size, resolution, and interpretation type, with default cell values.
RasterRotationApplier	Rotates a raster feature according to its rotation angle property, interpolating new cell values, updating all other affected raster properties, and producing an output raster feature with a rotation angle of zero.
RasterSegmenter	Partitions a raster image into arbitrarily sized groups of cells from the input image based on intensity differences in the input raster image cells.
RasterSelector	Selects specific bands and palettes of a raster for subsequent transformer operations.
RasterSingular CellValueCalculator	Performs basic arithmetic operations on the cell values of a raster against a numeric value.
RasterSlopeCalculator	Calculates the slope (maximum rate of change in z) for each cell of a raster.
RasterStatisticsCalculator	Calculates statistics on raster bands and adds the results as attributes.
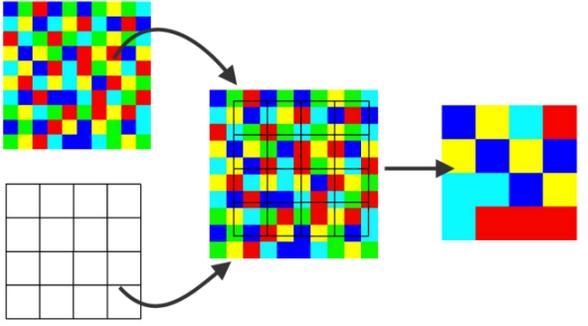
Transformer	Transformer Summaries
RasterSubsetter	Clips raster features using pixel bounds instead of ground coordinates, and optionally adds cells around the perimeter.
RasterTiler	Splits each input raster into a series of tiles by specifying either a tile size in cells/pixels or the number of tiles.
RasterToPolygonCoercer	Creates polygons from input raster features. One polygon is output for each contiguous area of cells with the same value in all bands.
RCaller	Executes an R script that has the ability to access feature data from a temporary R data frame.
Recorder	Saves a copy of all the features that enter to a disk file. This disk file can later be "played back" in the subsequent workspace by using the Player, or viewed using the FME Data Inspector.
ReframeReprojector	Reprojects feature coordinates from one coordinate system to another in Switzerland, using the Reframe library from the Federal Office of Topography (swisstopo).
ReprojectAngleCalculator	Converts a given angle from one coordinate system to another.

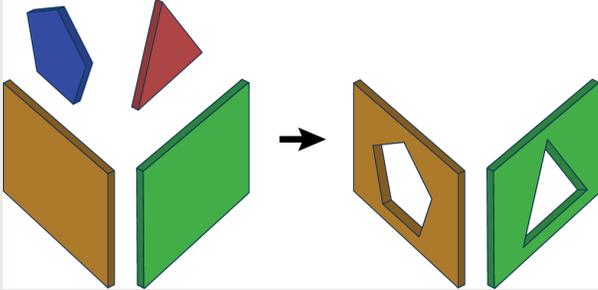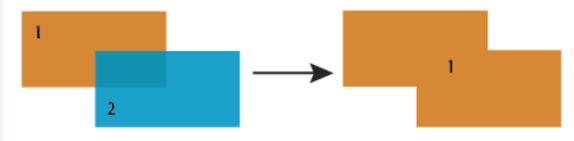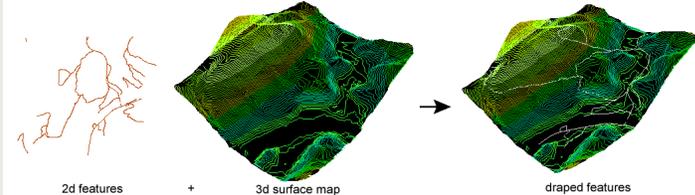| Transformer	Transformer Summaries
ReprojectLengthCalculator	Converts a given length from one coordinate system to another.
Reprojector	Reprojects feature x and y coordinates from one coordinate system to another.
NEW RevitStyler	Prepares features for output to Autodesk Revit by providing a convenient interface to set a variety of Autodesk Revit format-specific attributes.
Rotator	Rotates features in a counterclockwise direction about the specified point by the Rotation Angle parameter (measured in degrees).
RubberSheeter	Variably adjusts vector feature coordinates based on their proximity to control vectors indicating current and desired positions.
SalesforceConnector	Connects to Salesforce to read records using Salesforce Object Query Language (SOQL) queries.
Sampler	Preserves either a total number of features or a sampling of features, depending on the Sampling Type selection. The remainder of the input features are output through the NotSampled port.

Transformer	Transformer Summaries
Scaler	Scales x, y, and/or z coordinate values to resize geometry.
SchemaMapper	Converts the existing schema (data model) of features to a new structure, based on mappings defined in an external lookup table.
SchemaScanner	Produces a schema feature representing the feature type definition for each group of input data features.
SecondOrderConformer	Performs a second-order conformal transformation on the feature's geometry. Depending on the input geometry, a 2D or 3D transformation is performed.
SectorGenerator	Outputs circular sectors of influence for point features that have directions defined by azimuths (degrees clockwise from North).
SharedItemAdder	Adds or replaces Appearances, Textures, Rasters, or Geometry Definitions in the internal FMELibrary.
SharedItemIDExtractor	Extracts Shared Item IDs from the front and/or back side of geometries and adds them as traits or a list attribute.
SharedItemIDSetter	Sets Shared Object IDs onto the front and/or back sides of geometries.
SharedItemRetriever	Retrieves Appearances, Textures, Rasters, or Geometry Definitions from the internal FMELibrary.
SherbendGeneralizer	Simplifies geometry while preserving spatial relationships and applying spatial constraints.

Transformer	Transformer Summaries
ShortestPathFinder	Computes the shortest path of a line or lines containing a source and destination node in a network based on the length of the input or the cost (specified in an attribute) of each of the edges.
SlackConnector	Connects to Slack to post messages and files.
Snapper	Brings lines, segments, end points or vertex points of features together if they are within a certain distance of each other and (optionally) if they have one or more attributes in common.
Snipper	Shortens linear geometry by cutting off the ends.
SNSSender	Using the Amazon Simple Notification Service (SNS), sends messages to an Amazon SNS topic.
SolidBuilder	Constructs solids from surfaces and cuts hollow regions, or voids, in solid features with other solid features. A solid that is cut by another solid must contain that second solid.

Transformer	Transformer Summaries
SolidDissolver	Dissolves solid features by removing common boundaries to create larger solids. Input attributes may be accumulated.
Sorter	Sorts features according to attribute values.
SpatialFilter	Filters point, line, area, and text features based on spatial relationships.
SpatialRelator	Determines what type of spatial (topological) relationships exist between sets of point, line, area, and text features. Tags - but does not alter the geometry of - features when selected relationships exist, and performs a spatial join to optionally copy attributes between features.
SpatialSorter	Sorts features geographically (by location).
SpikeRemover	Removes spikes from line, path, and area geometry.

Transformer	Transformer Summaries
SQLCreator	Generates FME features and/or schemas from the results of a SQL query executed against a database. One FME feature is created for each row of the results of the SQL query.
SQLExecutor	Executes SQL queries against a database.
StatisticsCalculator	Calculates statistics based on a designated attribute or set of attributes of the incoming features and adds the results as attributes.
StreamOrderCalculator	Computes the Strahler order and/or Horton order of streams in a river network.
StreamPriorityCalculator	Calculates the primary and secondary streams of multiple stream networks. The key to determining the priority is the shortest path algorithm using multiple iterations within a network graph.
StringCaseChanger	Changes the case of text attributes to UPPERCASE, lowercase, Title case, or Full Title Case.

Transformer	Transformer Summaries
StringConcatenator	Concatenates the values of any number of attributes, user parameters and/or constants, and stores the result in a new attribute.
StringFormatter	Reformats the data held in each specified attribute.
StringLengthCalculator	Calculates the length of strings and the number of bytes in a blob.
StringPadder	Pads the selected attributes with a specified character, either on the right or left side.
StringPairReplacer	Replaces characters in the value contained in the source attribute based on replacement key-value pairs.
StringReplacer	Replaces substrings matching text or patterns described by regular expressions.
StringSearcher	Performs a regular expression match on the specified expression.
SubstringExtractor	Extracts a substring from the source attribute. The substring is taken from the range of characters specified.
SummaryReporter	Writes a summary report of features that enter to a disk file. Features are sorted prior to being summarized.

Transformer	Transformer Summaries
SurfaceBuilder	Cuts holes in surface features with other surface features. A surface that is cut by another surface must be co-planar with that second surface, and contain that second surface.
SurfaceDissolver	Detects coplanar regions of input surfaces and dissolves them into single faces. The output faces retain the attributes, traits, and appearances of the input.
SurfaceDraper	Constructs a Delaunay triangulation based on input points and breaklines. Input drape features will be overlaid onto the surface model, and output as draped features. 2d features + 3d surface map → draped features
SurfaceFootprintReplacer	Replaces the geometry of a feature with a planar representation of the feature's shadow.

Transformer	Transformer Summaries
SurfaceModeller	Constructs a Delaunay triangulation based on input points and breaklines. 2D feature + 3D surface map draped features
SurfaceOnSurfaceOverlayer	Performs a surface-on-surface overlay so that all input surfaces are intersected against each other and resultant surface features are created and output. The output surfaces can retain all the attributes of the input features in which they are contained.
SurfaceSplitter	Splits a double-sided input surface geometry into two single-sided surfaces – one equal to the front side of the input surface and one equal to the back side of the input surface.
SystemCaller	Runs a program or operating system command, and waits for it to exit before continuing the translation.
TCPIPReceiver	Receives raw data over TCP/IP. Produces a feature each time a specified number of bytes is received or a particular sequence is detected.
TCPIPSender	Sends raw data to the specified host, which may be another FME workspace running in a different process, (located on the same machine or on a different machine), or any client application that communicates over TCP/IP.
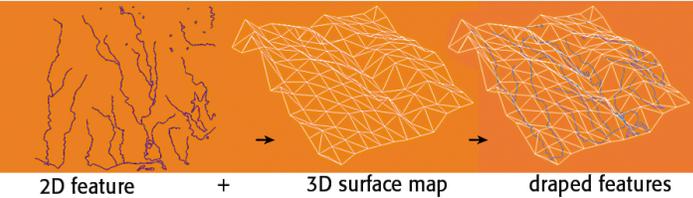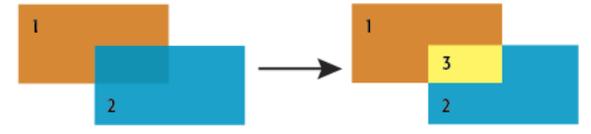
Transformer	Transformer Summaries
TempPathnameCreator	Reserves and returns a temporary file or folder path that will be deleted upon translation completion. An optional basename and extension can be supplied to further refine the filename portion of the resulting pathname.
Terminator	Stops a translation when it detects detect non-valid situations or input data conditions that should not exist.
Tester	Evaluates one or more tests on a feature, and routes the feature according to the outcome of the test(s).
TestFilter	Filters features by test conditions to one or more output ports.
TextAdder	Replaces any geometry with a single text label at the center of its bounding box.
TextDecoder	Decodes a string from a number of different text encodings into plain text.
TextEncoder	Encodes a text string using URL, Unicode, XML, HTML, Base64, Base64URL, HEX, or Octal methods.
TextLocationExtractor	Replaces text with its location geometry, usually a point.
TextPropertyExtractor	Retrieves text property values from text geometry, adding them to the feature as attributes.
TextPropertySetter	Modifies or creates text geometry according to new coordinates, text string, size, or rotation values.

Transformer	Transformer Summaries
TextStroker	Converts text to aggregate line or area geometry according to a specific True Type font.
TextureCoordinateSetter	Assigns texture coordinates to surfaces.
Tiler	Splits input features into a series of tiles by specifying either tile size (in ground units) or total number of tiles.
TimeWindower	Adds a time window attribute to each feature, assigning a Window ID based on either the time the feature arrives at the transformer or a timestamp stored as an attribute.
TINGenerator	Constructs a Delaunay triangulation based on input points and breaklines. The surface model may be output in a number of representations: a triangulated irregular network (TIN), TIN vertices, TIN edges, and triangles.
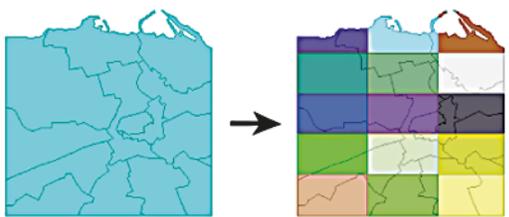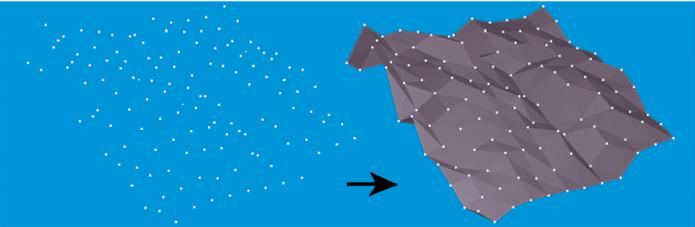
Transformer	Transformer Summaries
TopferIndexCalculator	Takes a set of point, linear, polygonal, and/or aggregate features, and calculates the Topfer Index based on user-provided source and destination scales.
TopologyBuilder	Computes topology on input point, line, and/or area features, and outputs significant nodes, edges, and faces with attributes describing topological relationships.
TraitMerger	Moves the traits from one geometry onto another geometry. It can also move the attributes from a feature onto a geometry as traits, or the traits from a geometry onto a feature as attributes.
TransporterReceiver	Receives features from another FME workspace running in a different process, which may be located on the same or a different machine.
TransporterSender	Sends features to another FME workspace running in a different process, which may be located on the same machine or on a different machine.
Triangulator	Breaks an input geometry into triangular units or a mesh.
UniqueIdentifierGenerator	Calculates a UUID (Universally Unique IDentifier) or ULID (Universally Unique Lexicographically Sortable Identifier) for each incoming feature, and adds it as an attribute.
VariableRetriever	Retrieves variable values into feature attributes.
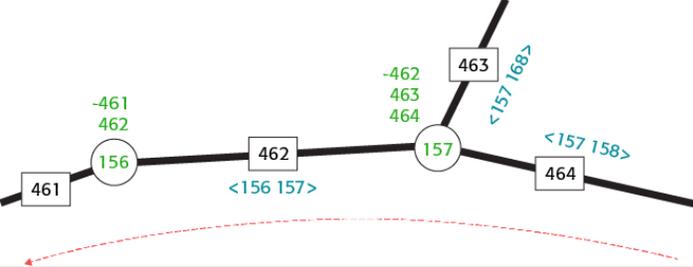
Transformer	Transformer Summaries
VariableSetter	Creates and sets the specified variable to the specified value.
VectorOnRasterOverlayer	Rasterizes vector or point cloud features onto an existing raster. For vector features the fme_color attribute sets pixel color, and point clouds may be rendered using their color or intensity components.
VertexCounter	Extracts a feature's total number of vertices, storing the result in an attribute.
VertexCreator	Creates a single vertex to replace, be appended to, or be inserted into existing geometry.
NEW VertexNormalGenerator	Calculates facet or averaged normals for each vertex of a feature's geometry.
VertexNormalRemover	Removes all vertex normals from a feature's geometry.
VertexRemover	Removes specific vertices from a feature's geometry.
VolumeCalculator	Calculates the volume of a solid object and stores the value in an attribute. The volume is calculated in cube map units, whatever they are.
VoronoiCellGenerator	Outputs circular sectors of influence for point features that have directions defined by azimuths (degrees clockwise from North).
VoronoiDiagrammer	Generates a Voronoi diagram or Thiessen polygon.
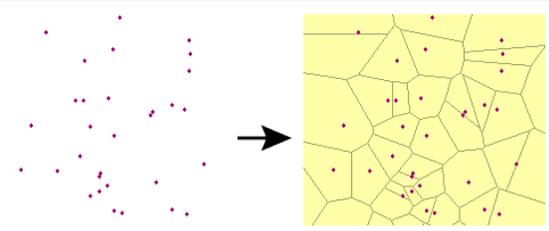
Transformer	Transformer Summaries
WebMapTiler	Creates series of raster tiles for use in web mapping applications such as Bing™ Maps, Google Maps™, or Web Map Tile Service. Tiles are produced at varying zoom levels, size, and resolution.
WorkspaceRunner	Runs another FME workspace on the local computer by calling an additional FME process.
XMLAppender	Assembles several XML documents into one.
XMLFeatureMapper	Constructs features from XML documents via xfMaps.
XMLFlattener	Flattens content of XML element(s) into feature attributes.
XMLFormatter	Provides various options for formatting and cleaning up XML documents.
XMLFragmenter	Maps elements from an XML document into XML fragments, and optionally flattens the content of the XML elements and the children further as feature attributes.
XMLNamespaceDeclarer	Declares missing namespaces in XML documents by matching prefixes from another sample XML file whose namespaces are fully declared.
XMLSampleGenerator	This transformer generates an XML document based on an XML Schema (XSD) file.
XMLTemplater	Populates an XML document with FME feature attribute values. The document is provided as a template, and the transformer will use XQuery to insert attribute values and geometry information into the template.
XMLUpdater	Modifies XML documents.
XMLValidator	Validates the syntax or schema of an XML file or text.

Transformer	Transformer Summaries
XMLXQueryExploder	Uses XQuery expression to extract portions of XML text into new FME features.
XMLXQueryExtractor	Uses XQuery expressions to extract portions of XML text into feature attributes.
XMLXQueryUpdater	Provides updates to an XML document using XQuery Update expressions.
XSLTProcessor	The XSLTProcessor uses an XSL (eXtensible Stylesheet Language) stylesheet to convert an XML document.

⬡ Package Transformer	Summary
⬡ AmazonAthenaConnector	Connects to Amazon Athena to query Amazon S3 datasets.
NEW ⬡ ArcGISAttachmentConnector	Connects to an ArcGIS Feature Service to manage attachments.
NEW ⬡ ArcGISBranchVersionManager	Connects to an ArcGIS Enterprise Version Management Server to manage a feature service's branch versions.
⬡ ArcGISOnlineConnector	Connects to Esri ArcGIS Online or Portal for ArcGIS to manage ArcGIS items.
⬡ AutodeskBIM360DocsConnector	(Deprecated) Accesses BIM 360 Docs and Autodesk Construction Cloud to upload, download, or delete files and folders or list file/folder information.

🎁 **Package Transformer**	**Summary**
🎁 AutodeskDocsConnector	Connects to Autodesk Docs, Autodesk Construction Cloud or Autodesk Build to manage files and folders.
🎁 AWSIoTConnector	Connects to the AWS IoT Core messaging broker to send and receive messages.
🎁 AzureAIVisionConnector	Connects to the Azure AI Vision service to detect objects in images.
🎁 AzureBlobStorageConnector	Connects to Azure Blob Storage to manage files and folders.
🎁 AzureEventHubsConnector	Connects to Azure Event Hubs to send, receive, and checkpoint messages.
🎁 AzureFileStorageConnector	Connects to Azure Files to manage files and folders.
🎁 AzureIoTConnector	Connects to the Azure IoT Hub to publish and receive messages.
🎁 AzureQueueStorageConnector	Connects to Azure Queue Storage to send and receive messages.

📦 Package Transformer	Summary
📦 AzureServiceBusConnector	Connects to Azure Service Bus to send and receive messages.
📦 AzureTextAnalyticsConnector	Connects to Azure Text Analytics Service for natural language processing on text.
📦 CesiumIonConnector	Connects to Cesium ion to manage assets.
📦 CityEngineModelGenerator	Generates 3D models from input geometries and ArcGIS CityEngine rule packages (*.rpk).
📦 CKANConnector	Connects to a CKAN open data portal to manage datasets and resources.
📦 ComprehendConnector	Connects to Amazon AI Comprehend for natural language processing on text.
NEW 📦 DocumentPDFStyler	Prepares features for output to the DocumentPDF Writer by applying styling with PDF format-specific attributes.
NEW 📦 DropboxConnector	Connects to Dropbox to manage files and folders.

📦 Package Transformer	Summary
📦 Emailer	Sends email via Simple Mail Transfer Protocol (SMTP), Gmail, or Microsoft Mail.
📦 Geocoder	Uses various external web services to convert addresses to coordinates or to find the closest addresses to coordinates (reverse geocode).
📦 GoogleBigQueryConnector	Connects to Google BigQuery to load and query tables .
📦 GoogleCloudPubSubConnector	Connects to Google Cloud Pub/Sub to create topics and subscriptions or send and receive messages.
📦 GoogleCloudStorageConnector	Connects to Google Cloud Storage to manage files and folders.
📦 GoogleIoTConnector	Connects to the Google IoT Core to send and receive messages.
📦 GoogleLanguageConnector	Connects to the Google Natural Language and Google Cloud Translation API for text analysis such as language and sentiment detection.
📦 GoogleVisionConnector	Connects to the Google Vision AI API for object detection in images.

🎁 Package Transformer	Summary
🎁 **IBMIoTConnector**	Connects to IBM's Watson IoT Platform through the MQTT protocol to send and receive messages.
NEW 🎁 **IBMMQConnector**	Connects to an IBM MQ 9.x Queue Manager to send or receive messages and publish or subscribe to topics.
🎁 **KafkaConnector**	Connects to Apache Kafka, Confluent, RedPanda or other Kafka-compatible data stream services to send and receive messages.
🎁 **MQTTConnector**	Connects to an MQTT broker to send and receive messages.
NEW 🎁 **MSWordStyler**	Prepares features for output to the Microsoft Word Writer by providing a convenient interface to set a variety of Microsoft Word format-specific attributes.
🎁 **NLPClassifier**	Using a trained model, this transformer classifies natural language text into different categories. It can be used for filtering, sentiment analysis, and other tasks.
🎁 **NLPTrainer**	Trains a natural language processing (NLP) classification model based on the user's specifications and the provided data.
🎁 **RabbitMQConnector**	Connects to a RabbitMQ AMQP 0-9-1 broker to send and receive messages.

🢭 **Package Transformer**	**Summary**
🢭 RekognitionConnector	Connects to Amazon Rekognition for object detection in images.
🢭 S3Connector	Connects to Amazon S3 to manage files and folders.
NEW 🢭 SharePointListAttachmentConnector	Connects to a SharePoint list item to manage attachments.
🢭 SharePointOnlineConnector	Connects to Microsoft SharePoint to manage files and folders.
🢭 SQSConnector	Connects to the Amazon Simple Queue Service to send and receive messages.
🢭 TrelloConnector	Connects to Trello to manage boards, lists, and cards.
🢭 TrimbleConnectConnector	Connects to Trimble Connect to manage files and folders.
NEW 🢭 TrimbleUnityConnector	Connects to Trimble Unity or Cityworks to manage cases, inspections, service requests, and work orders.

📦 **Package Transformer**	**Summary**
NEW 📦 WebSocketConnector	Connects to a WebSocket server to send and receive messages.
NEW 📦 WordToDocumentPDFStyler	Prepares Microsoft Word format for use in the Document PDF Writer.
📦 YAMLtoJSONConverter	Converts YAML to JSON.