## multiscale::analysis ::SpatialEntityPseudo3D # clusteredness Degree # density # area # perimeter # distanceFromOrigin # angle # triangularMeasure # rectangularMeasure # circularMeasure # shape # centre # updateFlag #STR REGION # STR\_CLUSTER # STR\_TRIANGLE #STR RECTANGLE #STR\_CIRCLE # STR\_UNDEFINED # OUTPUT\_SEPARATOR # ERR\_INPUT # ERR\_UNDEFINED\_TYPE # CONVEX\_HULL\_CLOCKWISE + SpatialEntityPseudo3D() + ~SpatialEntityPseudo3D() + getClusterednessDegree() + getDensity() + getArea() + getPerimeter() + getDistanceFromOrigin() + getAngle() + getShape() + getShapeAsString() + getTriangularMeasure() + getRectangularMeasure() + getCircularMeasure() + getCentre() + toString() + typeAsString() + fieldNamesToString() # updateMeasuresIfRequired() # updateMeasures() # updateClusterednessDegree() # updateDensity() # updateArea() # updatePerimeter() # updateShape() # updateCentrePoint() # isTriangularMeasure() # isRectangularMeasure() # isCircularMeasure() # normalisedShapeMeasure() # shapeAsString() # fieldValuesToString() # type() # convertPoints() - initialise()

## multiscale::analysis ::Cluster + ERR\_UNDEFINED\_SHAPE

- + ERR\_ORIGIN\_DEPENDENT
- **VALUES** - minAreaEnclosingTriangle
- minAreaEnclosingRect
- minAreaEnclosingCircleCentre
- minAreaEnclosingCircleRadius
- entities
- + Cluster()
- + ~Cluster()
- + addEntity()
- + getMinAreaEnclosingTriangle()
- + getMinAreaEnclosingRect()
- + getMinAreaEnclosingCircle
- Centre()
- + getMinAreaEnclosingCircle
- Radius()
- + getEntities()
- + getEntitiesConvexHull()
- + setOriginDependentMembers()
- initialise()

- getEntitiesCentrePoints()
- updateClusterednessDegree()
- getEntitiesContourPoints()
- updateDensity()

- updateArea() - updatePerimeter()
- updateCentrePoint() - isTriangularMeasure()
- isRectangularMeasure()
- isCircularMeasure()
- validateOriginDependentValues() - areValidOriginDependentValues()
- type()

## outerBorderPolygon

multiscale::analysis

- innerBorderPolygons
- CONTOUR\_ORIENTED
- CONTOUR\_CLOSED
- + Region()
- + ~Region()
- + getOuterBorderPolygon() + getInnerBorderPolygons()
- validateInputValues()
- areValidInputValues()
- areValidInputPolygons()
- areValidInputPolygons()
- isValidInputPolygon()
- updateClusterednessDegree() - computeClusterednessDegree
- IfOuterBorderDefined()
- updateDensity()
- updateArea()
- computeArealfOuterBoderDefined()
- updatePerimeter()
- isTriangularMeasure()
- isRectangularMeasure() isCircularMeasure()
- updateCentrePoint()
- type()