```
multiscale::analysis
      ::SpatialCollection2D
# clusterednessDegree
# area
# perimeter
# distanceFromOrigin
# angle
# triangularMeasure
# rectangularMeasure
# circularMeasure
# shape
# centre
# updateFlag
# STR_TRIANGLE
#STR_RECTANGLE
# STR_CIRCLE
# STR_UNDEFINED
#OUTPUT_SEPARATOR
# ERR_INPUT
# CONVEX_HULL_CLOCKWISE
+ SpatialCollection2D()
+ ~SpatialCollection2D()
+ getClusterednessDegree()
+ getArea()
+ getPerimeter()
+ getDistanceFromOrigin()
+ getAngle()
+ getShape()
+ getCentre()
+ toString()
# updateMeasuresIfRequired()
# updateMeasures()
# updateSpatialCollectionSpecific
Values()
# updateClusterednessDegree()
# updateArea()
# updatePerimeter()
# updateShape()
# updateCentrePoint()
# isTriangularMeasure()
# isRectangularMeasure()
# isCircularMeasure()
# shapeAsString()
# fieldValuesToString()
# convertPoints()
initialise()
multiscale::analysis
            ::Cluster
+ ERR_UNDEFINED_SHAPE
+ ERR_ORIGIN_DEPENDENT
VALUES

    pileUpDegree

    minAreaEnclosingTriangle

    minAreaEnclosingRect

    minAreaEnclosingCircleCentre

    minAreaEnclosingCircleRadius

    entities

+ Cluster()
+ ~Cluster()
+ addEntity()
```

```
+ getPileUpDegree()
+ getMinAreaEnclosingTriangle()
+ getMinAreaEnclosingRect()
+ getMinAreaEnclosingCircle
Centre()
+ getMinAreaEnclosingCircle
Radius()
+ getEntities()
+ getEntitiesConvexHull()
+ setOriginDependentMembers()
+ fieldNamesToString()
initialise()

    getEntitiesCentrePoints()

    getEntitiesContourPoints()

    updateSpatialCollectionSpecific

Values()
```

- updateClusterednessDegree()

- validateOriginDependentValues()- areValidOriginDependentValues()

updatePileUpDegree()

updateArea()
updatePerimeter()
updateCentrePoint()
isTriangularMeasure()
isRectangularMeasure()
isCircularMeasure()
fieldValuesToString()