

*Package in package 'Model'*

Basic Class Diagram with Operations  
Version 1.0 Phase 1.0 Proposed  
frgbsb created on 15/11/2018. Last modified 29/01/2018

*Class diagram in package 'Basic Class Diagram with Operations'*

Basic Class Diagram with Operations  
Version 1.0  
fmgosb created on 15/11/2018. Last modified 17/11/2018

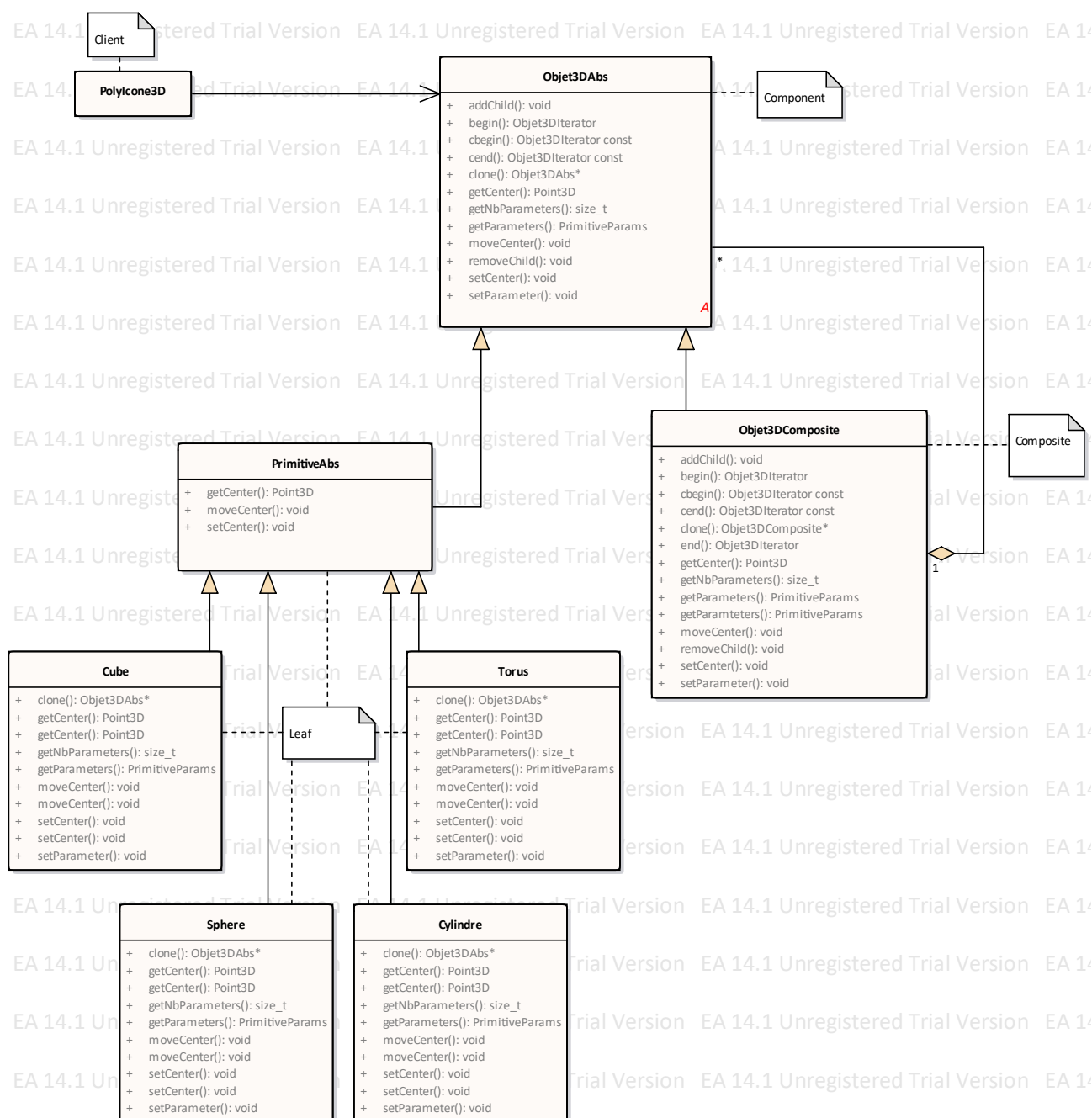


Figure 1: Basic Class Diagram with Operations

## Note

*Note in package 'Basic Class Diagram with Operations'*

Component

Note  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends

## Note

*Note in package 'Basic Class Diagram with Operations'*

Client

Note  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends

## Note

*Note in package 'Basic Class Diagram with Operations'*

Composite

Note  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends

## Note

*Note in package 'Basic Class Diagram with Operations'*

Leaf

Note  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends

## Class A

*Class in package 'Basic Class Diagram with Operations'*

Class A  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018

**ASSOCIATIONS**

 Association (direction: Unspecified) Association B

Source: Public role c (Class) Class A  
Cardinality: [0..1]

Target: Public role d (Class) Class C  
Cardinality: [0..\*]

 Association (direction: Unspecified) Association A

Source: Public role a (Class) Class A  
Cardinality: [0..\*]

Target: Public role b (Class) Class B  
Cardinality: [0..\*]

**OPERATIONS**

 Operation A (Parameter A : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

 Operation B (Parameter : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

**Class B**

*Class in package 'Basic Class Diagram with Operations'*

Class B  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018

**ASSOCIATIONS**

 Association (direction: Unspecified) Association A

Source: Public role a (Class) Class A  
Cardinality: [0..\*]

Target: Public role b (Class) Class B  
Cardinality: [0..\*]

**OPERATIONS**

 Operation A (Parameter A : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

 Operation B (Parameter : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

**Class C**

*Class in package 'Basic Class Diagram with Operations'*

Class C  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018

#### ASSOCIATIONS

 Association (direction: Unspecified) Association B

Source: Public role c (Class) Class A  
Cardinality: [0..1]

Target: Public role d (Class) Class C  
Cardinality: [0..\*]

#### OPERATIONS

 Operation A (Parameter A : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

 Operation B (Parameter : int ) : void Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

## Cube

Class in package 'Basic Class Diagram with Operations'

Cube  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018  
Extends PrimitiveAbs

#### OUTGOING STRUCTURAL RELATIONSHIPS

 Generalization from Cube to PrimitiveAbs  
[ Direction is 'Source -> Destination'. ]

## Cube

Class in package 'Basic Class Diagram with Operations'










Cube  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends PrimitiveAbs

#### OUTGOING STRUCTURAL RELATIONSHIPS

 Generalization from Cube to PrimitiveAbs  
[ Direction is 'Source -> Destination'. ]

#### OPERATIONS


 clone () : Objet3DAbs\* Public  
[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

OPERATIONS	
 <b>getCenter () : Point3D Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>getCenter () : Point3D Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>getNbParameters () : size_t Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>getParameters () : PrimitiveParams Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>moveCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>moveCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>setCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>setCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	
 <b>setParameter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]	

## Cylinder

*Class in package 'Basic Class Diagram with Operations'*

Cylinder  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018  
Extends PrimitiveAbs

OUTGOING STRUCTURAL RELATIONSHIPS	
 Generalization from Cylinder to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]

## Cylindre

*Class in package 'Basic Class Diagram with Operations'*

Cylindre  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends PrimitiveAbs

#### OUTGOING STRUCTURAL RELATIONSHIPS

← Generalization from Cylindre to PrimitiveAbs

[ Direction is 'Source -> Destination'. ]

#### OPERATIONS

◆ clone () : Objet3DAbs\* Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getNbParameters () : size\_t Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getParameters () : PrimitiveParams Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setParameter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

## Objet3DAbs

*Class in package 'Basic Class Diagram with Operations'*

Objet3DAbs  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 17/11/2018

#### OUTGOING STRUCTURAL RELATIONSHIPS

← Aggregation from Objet3DAbs to Objet3DComposite

[ Direction is 'Source -> Destination'. ]

← Aggregation from Objet3DAbs to Objet3DComposite

[ Direction is 'Source -> Destination'. ]

#### INCOMING STRUCTURAL RELATIONSHIPS

→ Generalization from Objet3DComposite to Objet3DAbs

[ Direction is 'Source -> Destination'. ]

→ Generalization from Objet3DComposite to Objet3DAbs

[ Direction is 'Source -> Destination'. ]

→ Generalization from PrimitiveAbs to Objet3DAbs

[ Direction is 'Source -> Destination'. ]

#### ASSOCIATIONS

✍ Association (direction: Source -> Destination)

Source: Public (Class) PolyIcône3D

Target: Public (Class) Objet3DAbs

#### OPERATIONS

◆ addChild () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ begin () : Objet3DIterator Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ cbegin () : Objet3DIterator const Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ cend () : Objet3DIterator const Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ clone () : Objet3DAbs\* Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public

OPERATIONS	
	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ getNbParameters () : size_t Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ getParameters () : PrimitiveParams Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ moveCenter () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ removeChild () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ setCenter () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
◆ setParameter () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

## Objet3DComposite

*Class in package 'Basic Class Diagram with Operations'*

Objet3DComposite  
Version 1.0 Phase 1.0 Proposed  
frgusb created on 15/11/2018. Last modified 15/11/2018  
Extends Objet3DAbs

OUTGOING STRUCTURAL RELATIONSHIPS	
↳ Generalization from Objet3DComposite to Objet3DAbs	[ Direction is 'Source -> Destination'. ]
INCOMING STRUCTURAL RELATIONSHIPS	
⇒ Aggregation from Objet3DAbs to Objet3DComposite	[ Direction is 'Source -> Destination'. ]

## Objet3DComposite

*Class in package 'Basic Class Diagram with Operations'*

Objet3DComposite  
Version 1.0 Phase 1.0 Proposed  
frgusb created on 15/11/2018. Last modified 17/11/2018



**OUTGOING STRUCTURAL RELATIONSHIPS**

← Generalization from `Objet3DComposite` to `Objet3DAbs`

[ Direction is 'Source -> Destination'. ]

**INCOMING STRUCTURAL RELATIONSHIPS**

⇒ Aggregation from `Objet3DAbs` to `Objet3DComposite`

[ Direction is 'Source -> Destination'. ]

⇒ Generalization from `TransformedObjet3D` to `Objet3DComposite`

[ Direction is 'Source -> Destination'. ]

⇒ Generalization from `Objet3DAbs` to `Objet3DComposite`

[ Direction is 'Source -> Destination'. ]

**OPERATIONS**

◆ `addChild () : void Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `begin () : Objet3DIterator Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `cbegin () : Objet3DIterator const Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `cend () : Objet3DIterator const Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `clone () : Objet3DComposite* Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `end () : Objet3DIterator Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `getCenter () : Point3D Public`






[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `getNbParameters () : size_t Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ `getParameters () : PrimitiveParams Public`

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

OPERATIONS
 <b>getParamteters () : PrimitiveParams Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 <b>moveCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 <b>removeChild () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 <b>setCenter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 <b>setParameter () : void Public</b> [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

## Point3D

*Class in package 'Basic Class Diagram with Operations'*

Point3D  
Version 1.0 Phase 1.0 Proposed  
frgosp created on 15/11/2018. Last modified 15/11/2018

## PolyIcône3D

*Class in package 'Basic Class Diagram with Operations'*

PolyIcône3D  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018

## PolyIcône3D

*Class in package 'Basic Class Diagram with Operations'*











PolyIcône3D  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018

ASSOCIATIONS
 Association (direction: Source -> Destination)  Source: Public (Class) PolyIcône3D                      Target: Public (Class) Objet3DAbs

## PrimitiveAbs

Class in package 'Basic Class Diagram with Operations'

PrimitiveAbs  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018  
Extends Objet3DAbs

OUTGOING STRUCTURAL RELATIONSHIPS	
 Generalization from PrimitiveAbs to Objet3DAbs	[ Direction is 'Source -> Destination'. ]
INCOMING STRUCTURAL RELATIONSHIPS	
 Generalization from Sphere to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
 Generalization from Cube to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
 Generalization from Cylinder to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
 Generalization from Torus to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
 Generalization from Cube to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
 Generalization from Cylindre to PrimitiveAbs	[ Direction is 'Source -> Destination'. ]
OPERATIONS	
 getCenter () : Point3D Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 moveCenter () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]
 setCenter () : void Public	[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

## Sphere

Class in package 'Basic Class Diagram with Operations'

Sphere  
Version 1.0 Phase 1.0 Proposed  
frgosb created on 15/11/2018. Last modified 15/11/2018

## Sphere

*Class in package 'Basic Class Diagram with Operations'*

Sphere  
Version 1.0 Phase 1.0 Proposed  
Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018  
Extends PrimitiveAbs

### OUTGOING STRUCTURAL RELATIONSHIPS

← Generalization from Sphere to PrimitiveAbs

[ Direction is 'Source -> Destination'. ]

### OPERATIONS

◆ clone () : Objet3DAbs\* Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getNbParameters () : size\_t Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getParameters () : PrimitiveParams Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

**OPERATIONS**

◆ setParameter () : void Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

**Torus**

*Class in package 'Basic Class Diagram with Operations'*

Torus

Version 1.0 Phase 1.0 Proposed

Antoine Lamontagne created on 17/11/2018. Last modified 17/11/2018

Extends PrimitiveAbs

**OUTGOING STRUCTURAL RELATIONSHIPS**

← Generalization from Torus to PrimitiveAbs  
 [ Direction is 'Source -> Destination'. ]

**OPERATIONS**

◆ clone () : Objet3DAbs\* Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getCenter () : Point3D Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getNbParameters () : size\_t Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ getParameters () : PrimitiveParams Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ moveCenter () : void Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

◆ setCenter () : void Public  
 [ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]

**OPERATIONS****setParameter () : void Public**

[ Is static False. Is abstract False. Is return array False. Is query False. Is synchronized False. ]