

Controlling the unified portrayal of geospatial cross-border maps

W3C workshop on
Access Control Application Scenarios

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Motivation Use Case

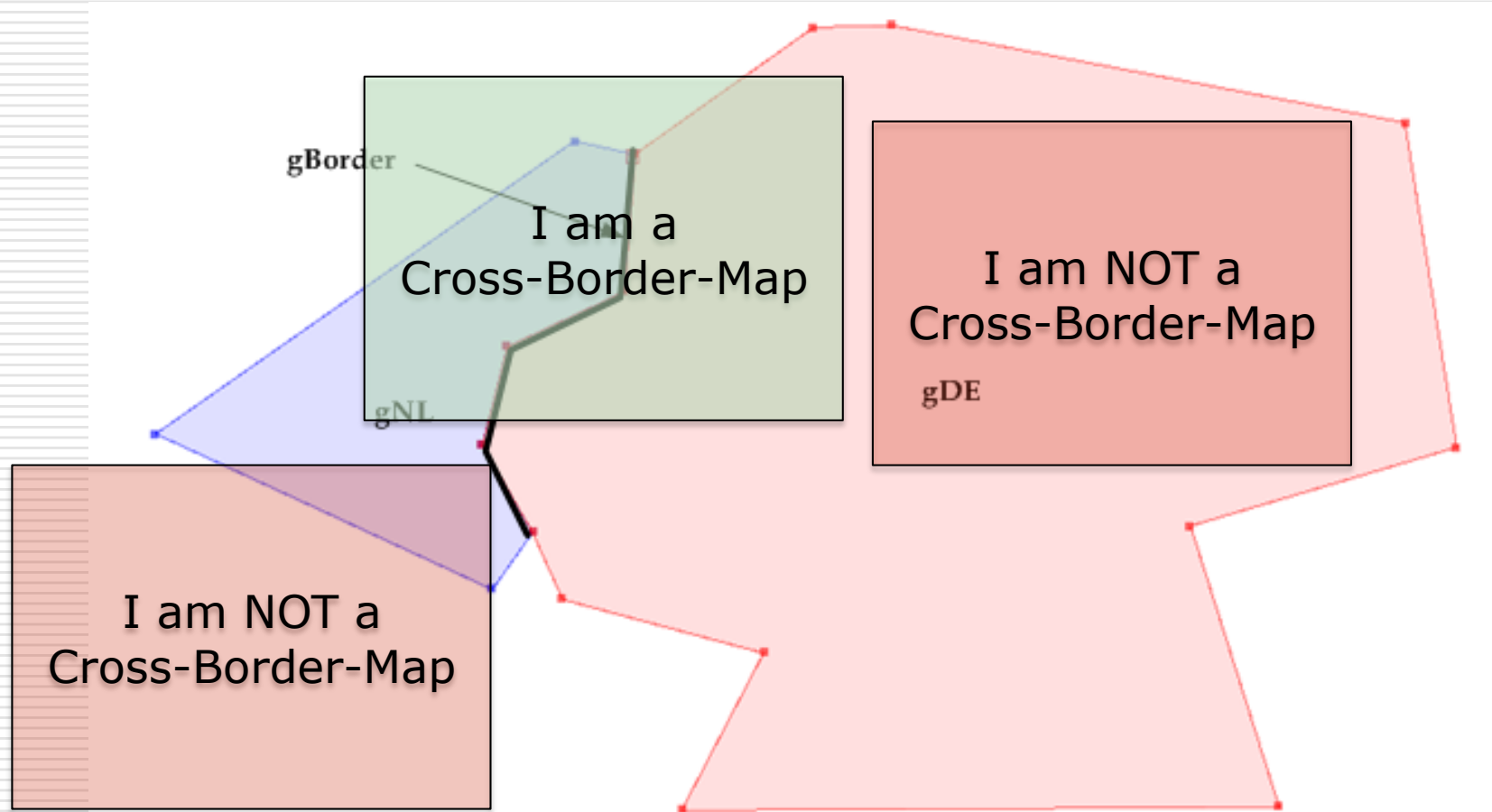
- ❑ Disaster management cross border
- ❑ Challenge: Different styling of maps
- ❑ Solution: Unified portrayal of maps



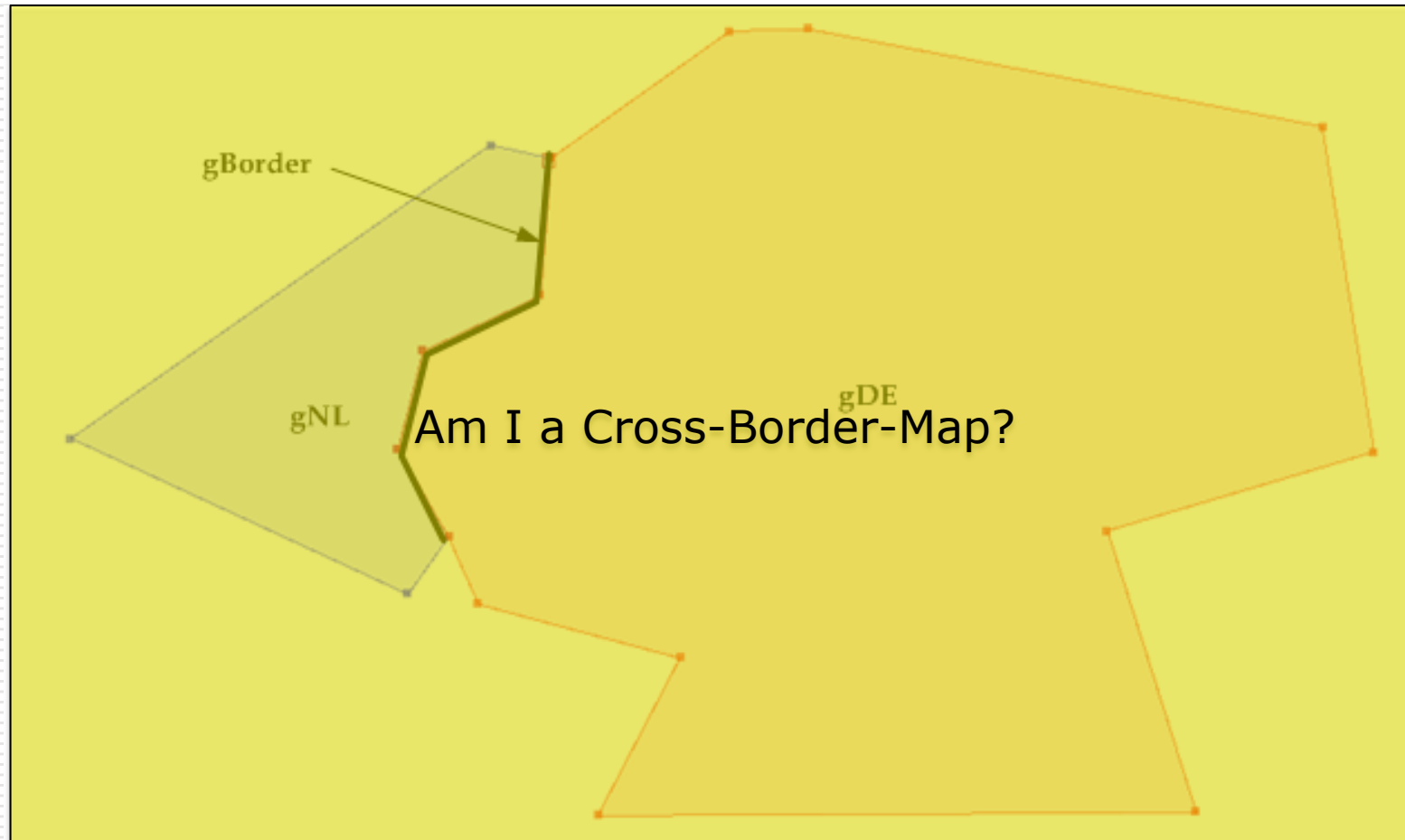
Geo-specific Access Rights

- ❑ Two rescue centers (German, Dutch)
 - ❑ Each rescue center can request maps using national portrayal
 - for own nation, and
 - for other nation only if „Cross-Border-Map“
 - ❑ Access needs to be controlled based on
 - Nationality of the center (Dutch or German)
 - Mapping area
 - Portrayal parameters (styling)
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What is a "Cross-Border-Map"?



What is a "Cross-Border-Map"?



Cross-Border Restrictions

Scenario*	Description
#1	A German user can apply German styling to German features
#2	A Dutch user can apply Dutch styling to Dutch features
#3	A German user cannot access Dutch features only (no cross-border operation!)
#4	A Dutch user cannot access German features only (no cross-border operation!)
#7	A German user can apply German styling to German AND Dutch features (cross-border operation)
#8	A Dutch user can apply Dutch styling to German AND Dutch features (cross-border operation)

*: Scenarios #5 and #6 are omitted for readability

GeoXACML 1.0

- Geo-specific extension of XACML 2.0
 - data type *Geometry*
 - geo-specific functions
 - GML2 and GML3 geometry encoding
 - Geo-specific functions
 - Testing topological relations, e.g. *Within*
 - Geometric functions, e.g. *Buffer, Boundary, Intersection, Distance*
-

Access Rights in GeoXACML

```
<Condition>
```

```
  <Apply FunctionId="urn:ogc:def:function:geoxacml:
    1.0:geometry-crosses">
```

```
    <Apply FunctionId="urn:ogc:def:function:geoxacml:
      1.0:geometry-one-and-only">
```

```
      <AttributeSelector
```

```
        DataType="urn:ogc:def:dataType:geoxacml:1.0:geometry"
```

```
        RequestContextPath="/xacml-context:Request/xacml-
context:Resource/xacml-context:ResourceContent/
ogc:GetMap/ogc:BoundingBox"/>
```

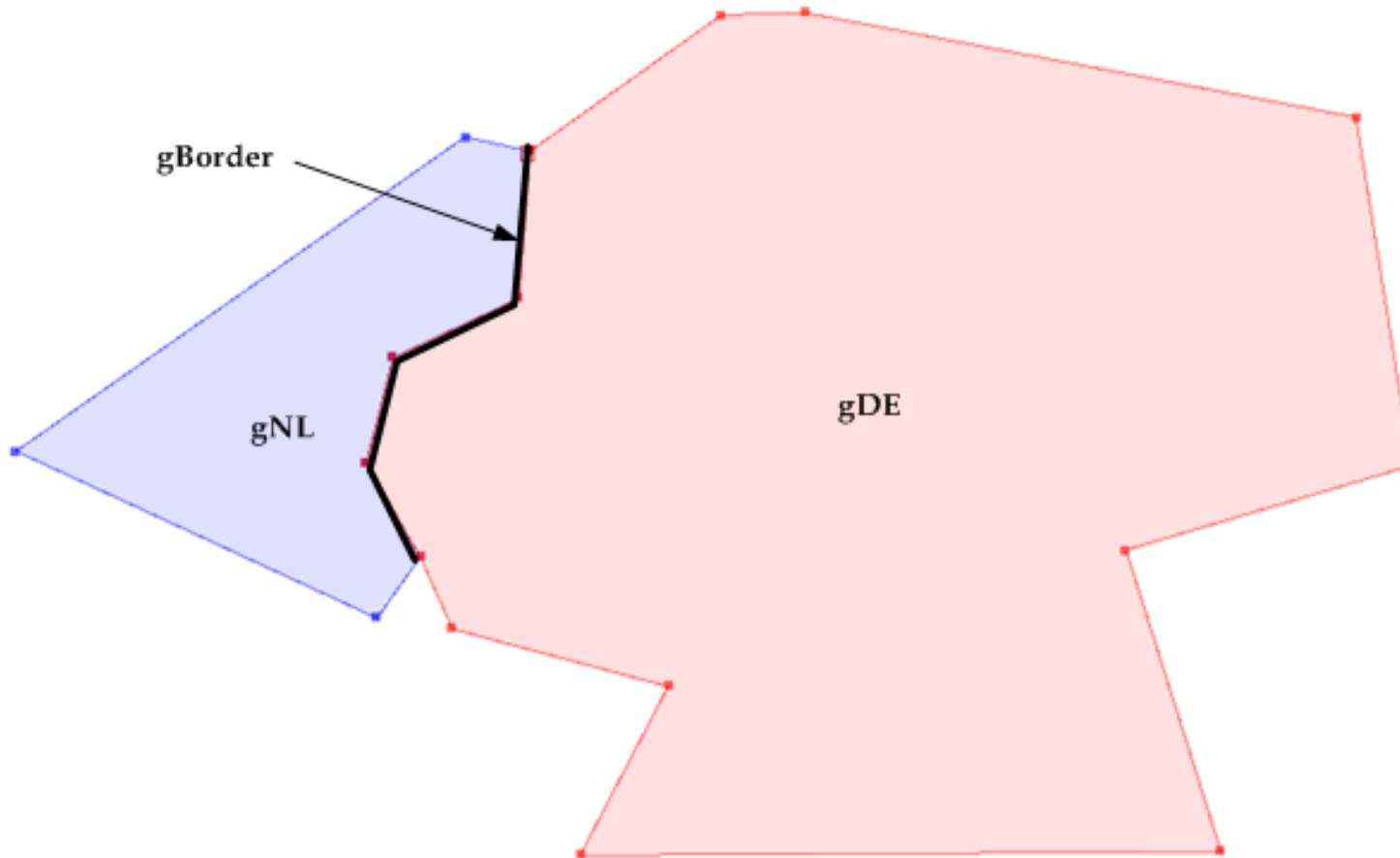
```
    </Apply>
```

```
    <VariableReference VariableId="gBorder"/>
```

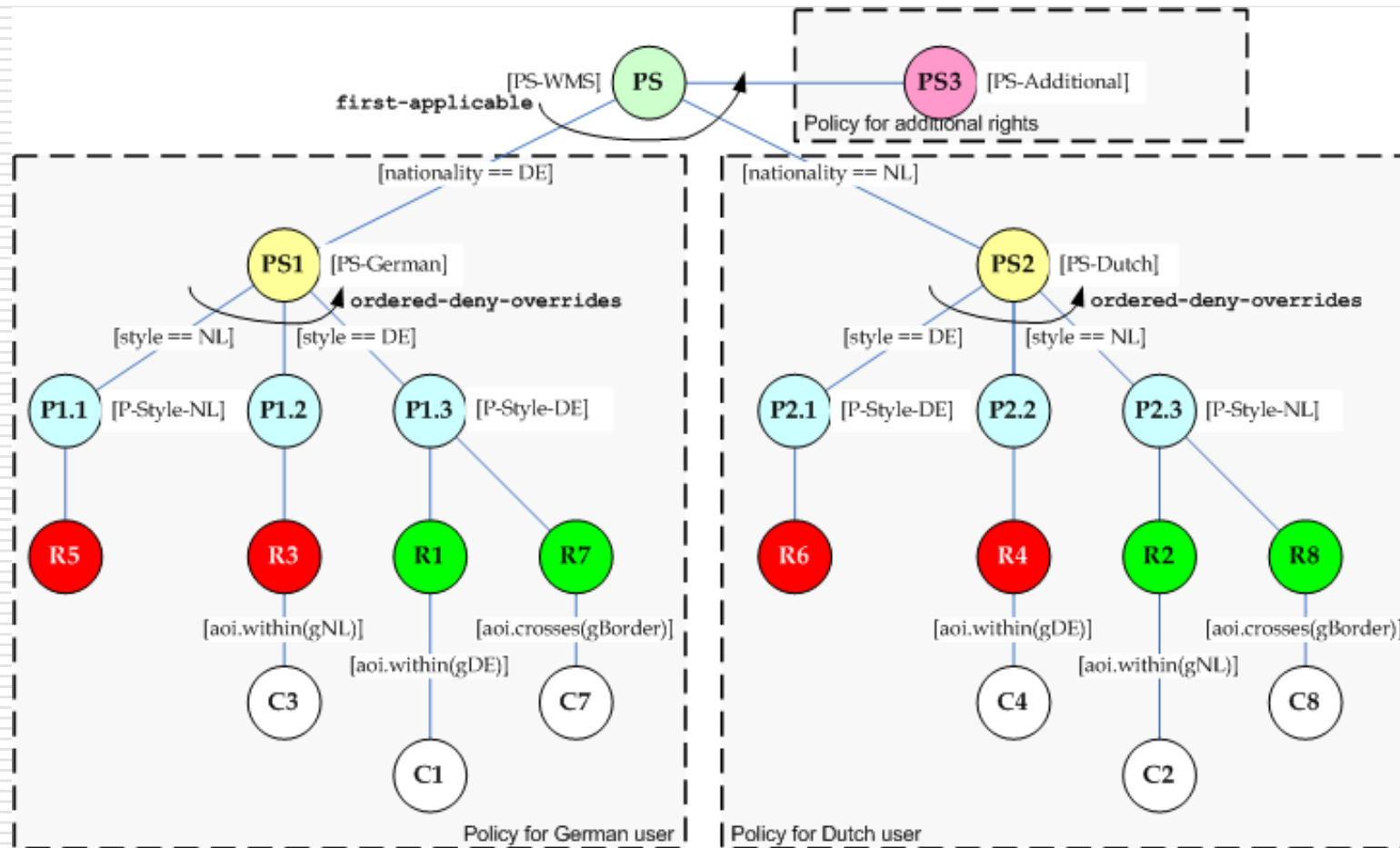
```
  </Apply>
```

```
</Condition>
```

Policy Geometries



Cross-Border Rights



Discussion

- Additional use case
 - Access controlled based on user location
 - Limitation
 - Geometry types *Null* and *Circle* are not supported in GeoXACML 1.0
 - Applicability of GeoXACML
 - All use cases where rights are based on geometry
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Thank You for your Attention!

„The important thing is to never stop questioning...” [Albert Einstein]

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