

# ***CGM OPEN WEBCGM TC ACTIVITY REPORT — 2004 HOUSTON MEETING***

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## ***Preface***

This report describes activities of CGM Open WebCGM TC meeting held from November 8-10, 2004 in Houston, Texas at the offices of System Development, Inc.

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## 1 Meeting Details

### 1.1 Location and Dates

SDI offices, Houston, November 8-10, 2004

### 1.2 Meeting

- CGM Open 8 November 2004.

### 1.3 CGM Open Attendees

- Dave Cruikshank – Boeing
- Dieter Weidenbruck – ITEDO
- Lofton Henderson – Henderson Consulting
- Ulrich Laesche – Ematek
- Benoit Bezaire – ITEDO
- Stuart Galt - Boeing
- Andrew Moorhouse – UK MOD
- Forrest Carpenter – System Development, Inc
- Don Larson – Larson Software Technology
- Franck DuLuc – EADS/Airbus (via telecon)

An additional guest from Larson Software Technology was present occasionally during the meetings.

## 2 Agenda

### 2.1 Meeting agenda

The items on the agenda of the Committee included:

- Election of CGM Open MS positions
- New OASIS TC process and membership agreement
- New CGM Open web pages
- Mantis interoperability project
- Liaison reports
  - SC24
  - W3C SVG
  - ATA GWG
  - ASD EPWG
  - USSIG
  - TechDoc
- Discussion of potential CGM V5 work
- ATA companion file metadata
- Status of progressing WebCGM 2.0 through OASIS/W3C
- Discussion of potential changes for WebCGM 2.0

- Open WebCGM DOM issues
- WebCGM XML companion file review
- Vendor implementation status
- Next meetings

### 3 Output and Action Items

Item	Who	When	Status
Meeting Minutes	Cruikshank	11/14	Draft – 11/14
<b>Committee Business</b>			
Member section elections - put out a nomination notice to MS mail list	Henderson		
Submit comments on new OASIS TC process	All	11/10	
Submit comments on new OASIS membership agreement	All	11/15	
<b>Liaisons</b>			
SC24 – follow upon png registration	Lofton		
SC24 - distribute report from meeting in Breckinridge	Lofton		
ASD EPWG – meet with Peter Zimmermann concerning S1000D companion file	Dieter		
USSIG – Determine status of MIL-STD-28003 and its relationship to the AIA adopted S1000D	Dave		Email sent to Denny Raitz and Harry Whittaker
TechDoc - follow up with Diane Kennedy on the status of the community	Don		
TechDoc – determine interest in submitting papers to Xtech 2005	Don		
<b>CGM V5</b>			
Open discussion of items for a potential CGM V5 project	Dave		
<b>ATA companion file metadata</b>			
Create PDF version of ATA companion file presentation for CGM Open web site	Franck		

Follow up with Franck on whether more semantics can be added to description of CDATA associated with various attributes	Dave		Email sent
Follow up with Franck on whether the ATA companion file DTD should be flattened	Dave		Email sent
Follow up with Franck on whether common metadata in ATA companion file could be included in WebCGM companion file	Benoit		Email sent
<b>WebCGM 2.0 progress</b>			
Fill in skeleton specification as a delta WebCGM 2.0 specification from WebCGM 1.0	Lofton		
<b>Changes for WebCGM 2.0</b>			
Dave to circulate questions related to potential alignment with webCGM (Non-graphical Text Strings, Symbol Library, Begin Figure, Begin Protection Region, Begin Tile Array, Integer Precision, Protection Region Indicator, Generalized Text Path Mode, Cell Array, Hyperbolic Arc, Parabolic Arc, Bitonal Tile, Tile, and Colour Model)	Dave		
Verify tail specification for UTF-8 and UTF-16	Lofton		
Develop maximum cells in each direction based on a max of 1 gigacells total	Lofton		
Develop proposal for behavior of interactive and static attributes in WebCGM 2.0	Benoit		
Develop table of interaction between WebCGM 2.0 attribute types and mouse events	Dieter		
Draft new behavior section of WebCGM 1.0 for WebCGM 2.0	Dieter		
Develop WebCGM DOM architecture section for WebCGM 2.0	??		
<b>Vendor implementation status</b>			
Build empty spreadsheet of WebCGM DOM vs vendor support	Dave		
<b>Next meetings</b>			
Determine feasibility of holding the next f2f meeting in Munich in February	Dieter		
Determine feasibility of hosting a meeting in Glasgow in May	Andrew		

## **4 Agenda discussions**

### **4.1 Election of CGM Open MS positions**

The CGM Open Member Section is due to hold an election for the governance positions. Currently Dieter is the chair, Lofton is the Program Director, and Dave is the other member. Lofton position as PD is automatic. Lofton nominated Dieter and Dave for the other positions. Nominations will be open until Dec 8<sup>th</sup>, 2004. At that time a ballot will be open for 30 days. Lofton will send out a notice to the CGM Open MS mailing list.

### **4.2 New OASIS TC process and membership agreement**

The committee reviewed the new OASIS TC process document. Potential areas of concern included the requirement for maintaining voting rights for a TC member and the requirement that all TC activity be hosted on OASIS supplied servers. Everyone was encouraged to submit comments to the OASIS review list by Nov 10. It was suggested that members get legal council on the membership agreement and submit comments by Nov 15.

### **4.3 New CGM Open web pages**

Lofton reported that the work on the new web pages is complete. OASIS web team estimates about 10 hours of work to get them implemented.

### **4.4 Mantis interoperability project**

There is a later version of php and mysql currently installed on the OASIS server and it is not compatible with our Mantic application. OASIS will be reverting to the older version in the future. In the meantime we can set a pointer to ITEDO web site (pending comment on OASIS TC process on hosting).

### **4.5 Liaison reports**

#### *4.5.1 ISO SC24*

Lofton reported that he had attended an SC24 meeting in Breckinridge and had discussions on the future of CGM. He will distribute the notes from that meeting. The status of the PNG registration should be complete by now, but Lofton will check on it.

#### *4.5.2 W3C SVG*

Benoit reported that the Tiny specification going to approved recommendation and SVG 1.2 is out for final review. There is a new working group working on compound document format to define the interaction between SVG and HTML. There are three organization currently in the process of subsetting the SVG specification.

#### *4.5.3 ATA GWG*

Dave reported that for the 2005 edition of the ATA iSpec 2200 GREXCHANGE will be defined as a cascading profile of WebCGM 1.0.

#### *4.5.4 ASDEPWG*

During the last EPWG meeting in Vaxjo, Sweden there was agreement in principle from EPWG on concept of cascading profile from WebCGM. The opinion of Peter Zimmermann is that the S1000D hotspot file will continue to exist, with conversion to a WebCGM compatible companion file occurring during IETM deployment. EPWG's parent committee, TPMSG, expressed concern that the ATA and S1000D profiles need to be kept in sync. Dave sent a draft of the GREXCHANGE cascading profile to Peter Zimmermann for review. Dieter will be meeting with Peter later in November to discuss WebCGM DOM issues. The next release of S1000D is 2.2 and has an authoring freeze in February of 2005 and it will cascade from WebCGM 1.0. The next opportunity for S1000D to adopt WebCGM 2.0 and the DOM will be during 2006.

#### 4.5.5 USSIG

THE USSIG is awaiting for action by ASD EPWG. Dave will run down the status of CALS 28000 with respect to AIA adoption of S1000D.

#### 4.5.6 TechDoc

Don reported that the TechDoc Community has not had any further activity since the cancelled workshop in June. There is a plan to restart the activity in the Spring of 2005, but there are no announcements yet. Don will follow up with Diane Kennedy. The XML Europe conference as been renamed Xtech 2005 and will be held during the week of May 24<sup>th</sup> in Amsterdam. Don will determine if there is any interest among CGM Open members for participation.

### 4.6 Discussion of potential CGM V5 work

Dave will open a discussion on the TC mail list to collect a list of potential items which might be included in CGM V5 project.

### 4.7 ATA companion file metadata

Franck presented the user position on the use of the ATA companion file and the associated metadata. The ATA companion file is described as an interchange format to carry various business/industry related metadata in addition to the CGM intelligence. He proposed that the ATA will continue maintaining the ATA companion file until WebCGM 2.0 and the WebCGM DOM is available. Conversion from an ATA companion file to a WebCGM compatible companion file is possible. He will make that presentation available in PDF format for posting on the CGM Open web site. There was discussion around whether the ATA companion file was really just a capture of the intelligence in the ATA CGM file, plus some additional industry metadata.

The following issues were identified:

- Duplication of CGM attributes in the ATA companion file and the WebCGM companion file – **the use of namespaces should eliminate this issue – Benoit will follow up with Franck to see if it would be acceptable to add duplicated elements to the WebCGM companion file**
- Potential abuse by identified additional hotspots in the ATA companion file – **if region is not added to the WebCGM companion file, this should not be an issue**
- ATA implementation of SGML instead of XML – **ATA would convert the companion file to a WebCGM compatible XML companion file at presentation**
- The WebCGM root element of <webcgm> vs the ATA root element of <v4sheet> - **ATA would use the webcgm root element in the WebCGM compatible companion file**
- Binding of the intelligence in the ATA companion file with WebCGM structures – **the mechanisms used in the WebCGM companion file will be adopted**
- The ATA companion file contains the option for structure while the WebCGM companion file is flat – **current implementations are flat and structure could be removed – Dave will follow up with Franck to see when structure can be removed**
- ATA control of DTD – **open**
- Vendor tools that create CGM files would have to support the creation of the ATA companion file and some of the attributes are underspecified and need further explanation – **Dave will follow up with Franck to see when further definition of attribute values can be made**

### 4.8 Status of progressing WebCGM 2.0 through OASIS/W3C

The process has been initiated to get W3C and OASIS to process WebCGM 2.0 in parallel. The CGM Open MS Steering Committee participated in a telecon with the OASIS governance. During that telecon a process was outlined. Lofton Chris Lilley created a proposal for the W3M (W3 governance). That proposal is being reviewed by the W3M along with comments submitted by Boeing and ITEDO during review of the W3C Graphics Activity proposal. The next are to get in a committee draft going

and proceed through the process. The initial work on the committee draft will be to create delta document in Lofton's skeleton WebCGM 2.0 draft. Ben will be responsible for the DOM chapter.

## **4.9 Discussion of potential changes for WebCGM 2.0**

### *4.9.1 Number of pictures (T13.2)*

#### **Proposal:**

The number of pictures should be limited to 1 with no exceptions for symbol libraries. WebCGM 1.0 2<sup>nd</sup> edition deprecated the usage of multi-picture files. Using one picture per file only will reduce complexity in software development, especially when considering DOM implementations, and it will reflect in the standard the de facto situation as it is today. This also suggests that symbol libraries should no longer be supported.

#### **Resolution:**

Prohibit multi-picture cgm files and eliminate symbol libraries. Related to this, it was decided to leave syntax with respect to referencing pictures in the fragment address, in case cascading profiles allow multiple pictures. ATA should consider deprecating symbol libraries.

### *4.9.2 Non-Graphical Text Strings (T14.5)*

#### **Proposal:**

We need to check the tail sequence for character set list elements UTF-8 and UTF-16. If WebCGM is incorrect, correct it in 2.0, but will allow legacy from WebCGM 1.0. In GREXCHANGE, all non-graphical strings are considered to be case insensitive. In WebCGM there is no such rule.

#### **Resolution:**

Lofton will verify the definition of the tail sequence for UTF-8 and UTF-16. Since ATA already agrees with WebCGM on the three cases where case insensitive makes sense (Font List, Metafile Description, and Font Properties). ATA should remove general statement from non-graphical text strings to harmonize. Examine usage of non-graphical strings and set common rule for case-sensitivity.

### *4.9.3 Begin Figure (T15.4)*

#### **Proposal:**

Change maximum number of elements to 1024.

#### **Resolution:**

Approve and suggest that ATA align with this.

### *4.9.4 Begin Protection Region (T15.5)*

#### **Proposal:**

Change to permitted, with the restriction that the number of simultaneously defined regions is restricted to 1. The region index is restricted to the value 1. This is used to mask artwork inside a given region.

#### **Resolution:**

Approve and suggest that ATA align with this.

### *4.9.5 Begin Compound Text Path (T15.7)*

#### **Proposal:**

Change to permitted with the same restricted as ATA. This is required to do circular text, often used for labels on panels.

#### **Resolution:**

Approve.

#### 4.9.6 *Begin Tile Array (T15.8)*

**Proposal:**

Change maximum number of cells/tile in path direction to 4096. Change maximum number of cells/tile in line direction to 4096.

**Resolution:**

Approve with the caveat that the total size maximum is 1 gigacells. Lofton will propose something in the profile for max cells in each direction base on reasonable size. As a secondary issue, the restriction in pel path direction (left to right) was approved.

#### 4.9.7 *Metafile Description (T16.2)*

**Proposal :**

Check whether normative text is needed to derive a cascading profile from WebCGM. That is, does the cascading profile replace the ProfileID, or does it use some combination?

**Resolution:**

No change needed. Cascading profiles need to mandate a distinct name for ProfileId.

#### 4.9.8 *Integer Precision (T13.1)*

**Proposal:**

Expanding the size of the Cell Array and Tile Array will require allowing Integer Precision of 32.

**Resolution:**

Allow both 16 and 32 as valid parameter for Integer Precision and suggest ATA align.

#### 4.9.9 *Character Set List (T16.14)*

**Proposal:**

Change tail sequences based of Lofton's investigation.

**Resolution:**

Approved.

#### 4.9.10 *Symbol Library List (T16.23)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

#### 4.9.11 *Auxiliary Colour (T18.3)*

**Proposal:**

Change to permitted to align with ATA.

**Resolution:**

Approved.

#### 4.9.12 *Transparency (T18.4)*

**Proposal:**

Change to permitted.

**Resolution:**

Approved.

4.9.13 *Protection Region Indicator (T18.13)*

**Proposal:**

Change to permitted with permissible values of “off” and “clip”.

**Resolution:**

Approve with restrictions and suggest ATA align.

4.9.14 *Generalized Text Path Mode (T18.14)*

**Proposal:**

Change to permitted with the only permissible value of “axis-tangential”.

**Resolution:**

Approve with restriction and suggest ATA align.

4.9.15 *Cell Array (T19.9)*

**Proposal:**

Change limit for nx to 32,768. Change limit for ny to 32,768. Change limit for nx\*ny to 1,073,741,824.

**Resolution:**

Approve and suggest ATA align.

4.9.16 *Hyperbolic Arc (T19.22)*

**Proposal:**

Change to permitted.

**Resolution:**

Leave as prohibited and suggest ATA align.

4.9.17 *Parabolic Arc (T.19.23)*

**Proposal:**

Change to permitted.

**Resolution:**

Leave as prohibited and suggest ATA align.

4.9.18 *Non-Uniform B-Spline (T19.24)*

**Proposal:**

Change to permitted

**Resolution:**

Approve.

4.9.19 *Non-Uniform Rational B-Spline (T19.25)*

**Proposal:**

Change to permitted

**Resolution:**

Approve.

4.9.20 *Bitonal Tile (T19.28)*

**Proposal:**

Check compression types. T.6 and uncompressed should suffice. The size restrictions (cells/tile) should be moved here.

**Resolution:**

Deprecate 0,1, & 6 from WebCGM and suggest that ATA add 5 to align.

*4.9.21 Tile (T19.29)*

**Proposal:**

Check compression types. 0 (uncompressed, 7 (JPEG), and 9 (PNG) would suffice. This would enforce usage of bitonal tiles for bitonal raster. The size restrictions (cells/tile) should be moved here.

**Resolution:**

Delete 0 & 1, deprecate 2, & 6 from WebCGM and suggest that ATA add 5 to align.

*4.9.22 Colour Model (T16.19)*

**Proposal:**

Deprecate sRGB and sRGB-alpha from WebCGM. It is unlikely that it is being implemented by anyone.

**Resolution:**

Approved and suggest ATA add RGB-alpha to align.

*4.9.23 Escape (T21.1)*

**Proposal:**

Review Escape parameters.

**Resolution:**

Escape 22 – retain.

Escape 45 – retain.

Escape 46, 47, & 48 – delete as they are related to Symbols.

Escape – 4000 (from ATA profile) – no change, ATA layers are not the same as WebCGM Layer APS types. There is no semantic meaning to and ATA layer and are used primarily for round-tripping in ATA illustrating tools.

*4.9.24 Polysymbol (T19.27)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

*4.9.25 Symbol Library Index (T20.48)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

*4.9.26 Symbol Colour (T20.49)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

4.9.27 *Symbol Size (T20.50)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

4.9.28 *Symbol Orientation (T20.51)*

**Proposal:**

Change to prohibited.

**Resolution:**

Approved.

4.9.29 *Application Structure Attribute (T24.1)*

**4.9.29.1 Interactivity attribute****Proposal:**

Add interactivity attribute with permissible values: 0 = not interactive, 1= interactive, 2=not interactive, external link information available, 3=interactive, external link information available. If the attribute is not present, the APS is considered to be interactive. If in this case no linkURI is present, external link information is assumed. Change the wording of the clickability concept of objects to reflect this.

**Resolution:**

Limit the values of interactivity to 0 and 1. Add an attribute of static to describe an APS that is only to used to define structure. Benoit will develop a proposal to reflect this approach with a default behavior is interactive if there is a linkuri (as in WebCGM 1) and static "no".

Dieter will create a table illustrating the relationship between attributes and effect on mouse interactivity (mouseover, mouseclick).

**4.9.29.2 Visibility attribute****Proposal:**

Add visibility attribute. Permissible values: 0=invisible, 1= visible.

**Resolution:**

Adopt visibility attribute as proposed. Adopt the pointer event behavior from SVG. An invisible object necessarily implies that it is non-interactive. Note: visibility has adverse effects in that a V3 interpreter will render all objects visible, since the ISO standard doesn't have the concept for invisible object – ignore and address at the V5 level). Default behavior of visibility is "yes". As a secondary issue, what kind of APS can be a target of a link? What is the behavior of a non-interactive or invisible or static APS that is the target of a link. Any object can be a target, except for an invisible object. When a link comes from an external source targeted to an invisible object just display the cgm file.

**4.9.29.3 Parablock attribute****Proposal:**

Consider the parablock attribute as ATA.

**Resolution:**

Reject and consider in CGM V5 project.

#### 4.9.30 *Inheritance:*

##### 4.9.30.1 Style attributes

###### **Discussion:**

The styling attributes inherit (or propagate downward). You can set a style attribute of a child, overriding the inherited attribute from parent, but attribute does not propagate upward.

##### 4.9.30.2 Interactivity

###### **Discussion:**

The interactivity attribute inherits (or propagate downward). It is possible to change interactivity of a child who's parent is invisible.

###### **Proposed:**

Click on static children bubble up to parent. Click on non-interactive children don't bubble up to parent.

Case 1: If a parent has been set to interactive through the DOM and then a child is explicitly set to non-interactive, then the child doesn't participate in clickability upward to the parent.

Case 2: The illustrating tool has created an interactive parent with non-interactive parents.

##### 4.9.30.3 Visibility

###### **Discussion:**

The visibility attribute inherits (or propagate downward). It is possible to change the visibility of a child who's parent is invisible.

#### 4.9.31 *Behavior section*

###### Discussion:

Dieter will draft a proposal for the current behavior section in WebCGM 1.0.

### **4.10 Open WebCGM DOM issues**

#### 4.10.1 *Tree order*

Tree order is done in file order, not foremost order.

#### 4.10.2 *Intensity style*

Raster intensity works the same way on grayscale AND black & white.

#### 4.10.3 *Style attributes*

APS style attribute modification is not cumulative. They have a transient behavior. As an example, init fill color is black, a DOM call to set the fill color to red, followed by another DOM call to set the fill color to 50%. The resulting color is 50% black.

#### 4.10.4 *Fill colour style*

Fill color impacts interior style types of solid, hatch, hollow, but not empty and pattern.

#### 4.10.5 *Font size style*

The result of a straw poll on control of text size was to leave it in and remove it if there aren't two applications that support it.

#### 4.10.6 *Interactivity*

###### **Question:**

What does `interactivity="none"` mean? Hyperlinks are disabled, ok. Should tooltip be shown? Should the cursor change if on a mouseover event? Is highlighting disabled or not if I click on a hotspot?

**Answer:**

The table being developed by Dieter will answer this question.

4.10.7 *getAttributeNS*

**Question:**

A user calls:

```
setAttributeNS("http://goodwines.com/bordeaux","favorite:petrus","1982");
```

followed with this call:

```
setAttributeNS("http://goodwines.com/bordeaux","hold:petrus","2014");
```

and this one:

```
getAttributeNS("http://goodwines.com/bordeaux","petrus");
```

Note: `getAttributeNS` takes a local name not a qualified name). What is the returned value from the `getAttributeNS` call, 1982 or 2014? According to our current WebCGM spec, this is underspecified; but it is well defined by the XML DOM spec. We should clarify the WebCGM spec by adding the following wording:

"If an attribute with the same local name and namespace URI is already present on the element, its prefix is changed to be the prefix part of the qualifiedName, and its value is changed to be the value parameter."

The proposal affects the `setAttributeNS` call and the result is that the first call to `setAttributeNS` gets overwritten by the second call. This is what the XML DOM does.

**Answer:**

Adopt what the XML DOM does.

4.10.8 *Insertions*

**Question:**

Assuming we have the following XML companion file:

```
<webcgm xmlns:cities="somelink">
  <cities:usa city="houston" state="texas" weather="warm"/>
  <cities:usa city="seattle" state="washington" weather="rain"/>
  <grobjct apsid="mapHouston" cities:map="true"/>
</webcgm>
```

Where should the two 'cities:usa' elements go in the tree? We have to make sure that all implementations provide access to those nodes using the same calls, For example, calling `.firstChild`; on the root element gives us the first 'cities:usa'; calling `.firstChild.nextSibling`; gives us the second one.

BTW, the same question applies to any APS, assume we have the following CGM file:

```
BEGAPS 'G1' 'grobjct' STLIST;
  BEGAPSBODY;
```

```

BEGAPS 'G2' 'gobject' STLIST;
  BEGAPSBODY;
ENDAPS;
ENDAPS;

```

and I have to add a 'cities:usa' tag as a child of 'G1', is it added before 'G2' or after 'G2'?

**Answer:**

Put it the end of the DOM tree.

#### 4.11 WebCGM XML companion file review

The WebCGM XML companion file was reviewed and updated to reflect defined values for visibility and interactivity.

```

<?xml version="1.0" encoding=UTF-16) ?>
<!DOCTYPE webcgm [

<!--                                     -->
<!-- Application specific entities       -->
<!-- Application groups define application specific attributes here -->
<!-- and define the stubs for application specific elements that -->
<!-- will be defined later in the DTD   -->
<!--                                     -->

<!ENTITY   % webcgmEXT      ""          >
<!ENTITY   % webcgmAttEXT  ""          >
<!ENTITY   % layerEXT      ""          >
<!ENTITY   % layerAttEXT   ""          >
<!ENTITY   % gobjectEXT    ""          >
<!ENTITY   % gobjectAttEXT ""          >
<!ENTITY   % paraEXT       ""          >
<!ENTITY   % paraAttEXT    ""          >
<!ENTITY   % subparaEXT    ""          >
<!ENTITY   % subparaAttEXT ""          >
<!ENTITY   % bindByIdEXT   ""          >
<!ENTITY   % bindByIdAttEXT ""         >
<!ENTITY   % bindByNameEXT ""         >
<!ENTITY   % bindByNameAttEXT ""       >

<!ELEMENT webcgm ( (layer | gobject | para | subpara
                   | bindById | bindByName)* %webcgmEXT; ) >
<!ATTLIST webcgm
          id          ID          #IMPLIED
          version    CDATA       #REQUIRED
          filename    CDATA       #REQUIRED
          %webcgmAttEXT;
                                     >

<!ELEMENT layer %layerEXT; >
<!ATTLIST layer
          apsid      ID          #REQUIRED
          layerdesc  CDATA       #IMPLIED
          visibility ( on | off ) #IMPLIED
          interactivity ( on | off ) #IMPLIED
          %layerAttEXT;
                                     >

```

```

<!ELEMENT grobject ( linkuri* %grobjectEXT; ) >
<!ATTLIST grobject
  apsid          ID          #REQUIRED
  screentip      CDATA       #IMPLIED
  visibility     ( on | off ) #IMPLIED
  interactivity  ( on | off ) #IMPLIED
  %grobjectAttEXT;
>
<!ELEMENT linkrui EMPTY >
<!ATTLIST linkrui
  uri           CDATA       #REQUIRED
  behavior      CDATA       #IMPLIED
  desc          CDATA       #IMPLIED
>
<!ELEMENT para ( linkuri* %paraEXT; ) >
<!ATTLIST para
  apsid          ID          #REQUIRED
  screentip      CDATA       #IMPLIED
  visibility     ( on | off ) #IMPLIED
  interactivity  ( on | off ) #IMPLIED
  %paraAttEXT;
>
<!ELEMENT subpara ( linkuri* %subparaEXT; ) >
<!ATTLIST subpara
  apsid          ID          #REQUIRED
  screentip      CDATA       #IMPLIED
  visibility     ( on | off ) #IMPLIED
  interactivity  ( on | off ) #IMPLIED
  %subparaAttEXT;
>
<!ELEMENT bindById ( linkuri* %bindByIdEXT; ) >
<!ATTLIST bindById
  apsid          ID          #REQUIRED
  screentip      CDATA       #IMPLIED
  layerdesc      CDATA       #IMPLIED
  visibility     ( on | off ) #IMPLIED
  interactivity  ( on | off ) #IMPLIED
  %bindByIdAttEXT;
>
<!ELEMENT bindByName ( linkuri* %bindByNameEXT; ) >
<!ATTLIST bindByName
  apstargetname CDATA       #REQUIRED
  screentip      CDATA       #IMPLIED
  layerdesc      CDATA       #IMPLIED
  visibility     ( on | off ) #IMPLIED
  interactivity  ( on | off ) #IMPLIED
  %bindByNameAttEXT;
>
<!-- -->
<!-- Define content models for application specific elements -->
<!-- -->
]>

```

#### **4.12 Vendor implementation status**

Ulrich submitted a good summary of his implementation. As a result, Dave will create a spreadsheet of DOM functionality based on the draft DOM specification with columns to represent vendor implementations. This spreadsheet will be distributed to the vendors for input.

#### **4.13 Next meetings**

There was interest in another f2f meeting in February to check the status of WebCGM 2.0 and the WebCGM DOM. It is possible that this meeting could take place in Munich and coordination could take place with Peter Zimmermann in the EPWG CGM activities. Dieter will investigate this possibility.

A Glasgow f2f meeting in May was also proposed. Andrew will investigate.

### **5 Note of appreciation**

CGM Open WebCGM TC would like to express our thanks to System Development and Larson Software Technology for arranging the meeting and hosting events.