

Referências Bibliográficas

- [AABE98] ABOWD, G. D.; ATKESON, C. G.; BROTHERTON, J.; ENQVIST, T. et al. **Investigating the capture, integration and access problem of ubiquitous computing in an educational setting.** In: Proceedings of CHI '98, Los Angeles. Apr., 1998.
- [AACD06] ANDERSON, RICHARD; ANDERSON, RUTH; CHUNG, O.; DAVIS, K. M.. et al. **Classroom Presenter - A Classroom Interaction System for Active and Collaborative Learning.** In: WIPTE 2006. Apr., 2006.
- [ABNT07] ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS. **NBR 15606-2.** Televisão digital terrestre - Codificação de dados e especificações de transmissão para radiodifusão digital - Parte 2: Ginga-NCL para receptores fixos e móveis – Linguagem de aplicação XML para codificação de aplicações: Codificação de dados. Rio de Janeiro. 2007.
- [Abow99] ABOWD, G. D. **Classroom 2000: An Experiment with the Instrumentation of a Living Educational Environment.** IBM Systems Journal. 38(4). 1999. p. 508-530.
- [ABVV03] ANDERSON, R.; BEAVERS, J.; VANDEGRIFT, T.; VIDEON F. **Videoconferencing and presentation support for synchronous distance learning.** In: Proceedings of 33rd ASEE/IEEE Frontiers in Education Conference. Boulder, CO, USA. Nov., 2003.
- [AGL03] ABOWD, G. D.; GAUGER, M.; LACHENMANN, A. **The family video archive: an annotation and browsing environment for home movies.** In: MIR '03: Proceedings of the 5th ACM SIGMM international workshop on Multimedia information retrieval. New York, NY, USA. ACM Press. 2003. p. 1-8.
- [AM00] ABOWD, G. D.; MYNATT, E. D. **Charting past, present, and future research in ubiquitous computing.** ACM Transactions on Computer- Human Interaction (TOCHI) 7(1), 31–58, Mar., 2000.

- [Andr04] ANDRADE, A. **Geração automática de aplicações Web para aplicações de captura e acesso.** Dissertação de Mestrado. Instituto de Ciências Matemáticas e de Computação, USP, 2004.
- [Anto00] ANTONACCO, M. J. **NCL: Uma Linguagem Declarativa para Especificação de Documentos Hipermídia com Sincronização Temporal e Espacial.** Dissertação de Mestrado. Departamento de Informática, PUC-Rio, 2000.
- [ASF04] **Advanced Systems Format (ASF) Specification.** Microsoft Corporation. Dez, 2004.
- [BACP04] BALDOCHI, L.; ANDRADE, A.; CATTELAN, R.; PIMENTEL, M. **Architecture and Components for Capture and Access Applications.** In: Proceedings WebMedia and LA-Web, 2004.
- [Bald02] BALDOCHI, L. **Armazenamento, recuperação e extensão de informação proveniente de atividades de captura.** Monografia de qualificação submetida ao Programa de Doutorado do ICMC-USP, 2002.
- [BCHM04] BEAVERS, J.; CHOU, T.; HINRICHS, R.; MOFFATT, C. et al. **The Learning Experience Project: Enabling Collaborative Learning with ConferenceXP.** In: Microsoft Research Technical Report - MSR-TR-2004-42. Redmond, WA, USA. Apr., 2004.
- [Bian04] BIANCHI, M. **Automatic Video Production of Lectures Using an Intelligent and Aware Enviroment.** In: Mobile and Ubiquitous Multimedia (MUM2004). Maryland, USA. Oct., 2004.
- [Bian98] BIANCHI, M. **AutoAuditorium: A Fully Automatic, Multi-Camera System to Televisе Auditorium Presentations.** In: Joint DARPA/NIST Smart Spaces Workshop, Gaithersburg, MD. 1998.
- [Bila02] BILA, W. S. **eMeet/InCA: Captura e Acesso de Informações Multimídia em Reuniões Distribuídas.** Dissertação de Mestrado. ICMC-USP. Mar., 2002.
- [Brot01] BROTHERTON, J.A. **Enriching Everyday Activities through the Automated Capture and Access of Live Experiences - eClass: Building, Observing and Understanding the Impact of**

Capture and Access in an Educational Domain. Ph.D. Thesis, College of Computing, Georgia Institute of Technology. 2001.

- [BTA99] BROTHERTON, J.; TRUONG, K.; ABOWD, G. **Supporting capture and access interfaces for informal and opportunistic Meetings.** Technical Report GITGVU 99-06, Gvu Center, Georgia Institute of Technology. 1999.

- [Bult03] BULTERMAN, D. **Using SMIL to encode interactive, peer-level multimedia annotations.** In: Proceedings of the 2003 ACM symposium on Document engineering. Grenoble, France. 2003. p. 32-41.

- [CARP03] CATTELAN, R. G.; ANDRADE, A. R. DE; ROCHA, C. F. P.; PIMENTEL, M. G. C. **iClass: um sistema para captura e acesso de sessões em ambiente educacional.** Revista Eletrônica de Iniciação Científica. 2003. Ano 3, Volume 3, Número 1. p. 1519-8219.

- [Cate04] CATTELAN, R. G. **Construção de aplicações de captura e acesso baseada em recorrência de funcionalidades.** Dissertação de Mestrado. ICMC, USP. 2004.

- [CBGK01] CHIU, P.; BORECZKY, J.; GIRGENSOHN, A.; KIMBER, D. **LiteMinutes: an Internet-Based System for Multimedia Meeting Minutes.** In: Proceedings of the 2001 International World Wide Web Conference. 2001. p. 140-149.

- [CBP03] CATTELAN, R. G.; BALDOCHI Jr, L. A.; PIMENTEL, M. G. **Experiences on Building Capture & Access Applications.** WebMidia 2003 - IX Simpósio Brasileiro de Sistemas Multimídia e Web. Salvador, BA, Brasil. Nov., 2003.

- [Chap07] CHAPPELL, D. **Introducing Windows Communication Foundation.** Microsoft. Sep., 2007.

- [Clas08] **Classroom Presenter.** Disponível na WEB em: <<http://classroompresenter.cs.washington.edu/>>. Acessado em Janeiro, 2008.

- [Coat02] COATTA, T. **Silicon Chalk and Pervasive Learning. Using technology to Support learning in Many Contexts.** Oct., 2002.

- [DA00] DEY, A. K.; ABOWD, G. D. **Towards a Better Understanding of Context and ContextAwareness.** In: CHI 2000 Workshop on the What, Who, Where, When, and How of ContextAwareness. Apr., 2000.
- [Dey01] DEY, A.K. **Understanding and Using Context. Special issue on Situated Interaction and Ubiquitous Computing.** Volume 5, Number 1. Feb., 2001. p. 4-7.
- [Eleu02] ELEUTÉRIO, P. M. S. **eMeet/SERVE: geração sob-demanda de hiperdocumentos multimídia a partir de informação capturada em reuniões distribuídas.** Dissertação de Mestrado. ICMC, USP. 2002.
- [Glad05] GLASBERG, M. S. **ActivePresentation. Um Sistema para Apresentações Distribuídas em Ambientes de Computação Ubíqua.** Dissertação de Mestrado. PUC-Rio. Nov., 2005
- [Gold02] GOLDBERG, M. W. **Silicon Chalk. Supporting Learning in the Classroom and Beyond.** Oct., 2002.
- [GRFF01] GEYER, W.; RICHTER, H.; FUCHS, L.; FRAUENHOFER, T. et al. **A Team Collaboration Space Supporting Capture and Access of Virtual Meetings.** In: ACM 2001 International Conference on Supporting Group Work, Boulder, Colorado, USA. 2001.
- [Haupt95] HAUPTMANN, A. **Speech recognition in the informedia digital video library: Uses and limitations.** In: Proceedings of the IEEE International Conference on Tools with AI (ICTAI). Nov, 1995.
- [HFGM98] HARRISON, B.L., FISHKIN, K., GUJAR, A., MOCHON, C. et al. **The Design and Use of Squeezable Computers: An Exploration of Manipulative User Interfaces.** In: Proceedings CHI' 98. May, 1998. p. 17-24.
- [Ieru06] IERUSALIMSKY, R. **Programming in Lua.** 2. ed. Lua.Org. 2006. 328 p.
- [IU97] ISHII, H., ULLMER, B. **Tangible bits: towards seamless interfaces between people, bits and atoms.** In: Proceedings of the

ACM Conference on Human Factors in Computing Systems, Mar., 1997.

- [KHWS07] KIENTZ, J. A.; HAYES, G. R.; WESTEYN, T.L.; STARNER, T.; ABOWD, G. D. **Pervasive Computing and Autism: Assisting Caregivers of Children with Special Needs.** In: IEEE Pervasive Computing Magazine. Special Issue on Pervasive Healthcare. Jan., 2007.

- [LRGC01] LIU, Q.; RUI, Y.; GUPTA, A.; CADIZ, J. J. **Automating Camera Management for Lecture Room Environments.** In: Proceedings of CHI 2001. Seattle, WA. 2001.

- [Malc07] MALCHER, M. A. G. **Um Middleware e Aplicativo para Apresentação Colaborativa Sensível a Contexto para Dispositivos Móveis.** Dissertação de Mestrado. Departamento de Informática, PUC-Rio. Rio de Janeiro, Brasil. 2007.

- [MIMI08] **Mimio interactive whiteboards and collaborative technologies.** Disponível na WEB em: <<http://www.mimio.com/>>. Acessado em Abril, 2008.

- [MS99] MUKHOPADHYAY, S.; SMITH, B. **Passive Capture and Structuring of Lectures.** IN: ACM Multimedia '99. Orlando, Florida, USA. Oct., 1999.

- [MSG02] MOESLUND, T. B.; STÖRRING, M.; GRANUM, E. **A Natural Interface to a Virtual Enviroment through Computer Vision-Estimated Pointing Gestures.** International Workshop on Gesture and Sign Languages in Human-Computer Interaction. London, UK. 2001. p. 59-63.

- [NSRB07] NETO, C. S. S.; SOARES, L. F. G.; RODRIGUES, R. F.; BARBOSA, S. D. J. **Construindo Programas Interativos Utilizando a NCL 3.0 e a Ferramenta Composer.** 2. ed. PUC-Rio. 2007.

- [PIKA01] PIMENTEL, M.; ISHIGURO, Y.; KERIMBAEV, B.; ABOWD G. D. et al. **Supporting educational activities through dynamic web interfaces. Interacting with Computers.** 13 (3), Feb., 2001. p. 353-374.

- [PMMH93] PEDERSEN, E.; McCALL, K.; MORAN, T.; HALASZ, F. **Tivoli: an electronic whiteboard for informal workgroup meetings.** In: Proceedings of the SIGCHI conference on Human factors in computing systems. Amsterdam, The Netherlands. 1993. p. 391-398.
- [RAGF01] RICHTER, H. A.; ABOWD, G. D.; GEYER, W.; FUCHS, L. et al. **Integrating Meeting Capture within a Collaborative Team Environment.** In: Proceedings of the 3rd international conference on Ubiquitous Computing. USA. 2001. p. 123-138.
- [RB05] RIISGAARD, T.; BARDRAM, J. E. **ActiveTheatre – A Collaborative, Event-Based Capture and Access System for the Operating Theatre.** In: Proceedings of UbiComp'05. 2005. p. 375-392.
- [Sant06] SANTOS, M. N. **GridFS – Um Servidor de Arquivos para Grades e Ambientes Distribuídos Heterogêneos.** Dissertação de Mestrado. Departamento de Informática, PUC-Rio. Rio de Janeiro, Brasil. 2006.
- [Saty01] SATYANARAYANAN, M. **Pervasive Computing: Vision and Challenges.** In: Proceedings of IEEE Personal Communications. 2001. p. 10-17.
- [SATT99] SCHMIDT, A.; AIDOO, K.A.; TAKALUOMA, A.; TUOMELA, U. et al. **Advanced Interaction in Context.** In: Proceedings of 1th International Symposium on Handheld and Ubiquitous Computing (HUC99), Springer LNCS, 1999. Vol. 1707; p. 89-101.
- [SAW94] SCHILIT, B.; ADAMS, N.; WANT, R. **Context-aware computing applications.** In: Proceedings of IEEE Workshop on Mobile Computing Systems and Applications (WMCSA'94). Santa Cruz, CA, US. 1994. p. 89-101.
- [SAW03] SIMON, B.; ANDERSON, R.; WOLFMAN, S. **Activating Computer Architecture with Classroom Presenter.** In: Workshop on Computer Architecture Education 2003. San Diego, CA, US. Jun., 2003.
- [SCGM04] SANTE, D. G.; CAMACHO-GUERRERO, J. A.; MACEDO, A. A.; FORTES, R. P. **Preparing, Extending and Retrieving Captured Information.** In: Proceedings of the Webmedia & La-

Web 2004 Joint Conference 10th Brazilian Symposium on Multimedia and the Web 2nd Latin American Web Congress - Volume 00 (October 12 - 15, 2004). LA-WEBMEDIA. IEEE Computer Society, Washington, DC. 2004. p. 158-160.

- [SGHH94] STRITZ, N.; GEIBLER, J.; HAAKE, J.; HOL, J. **DOLPHIN: integrated meeting support across local and remote desktop environments and LiveBoards**. In: Proceedings of the 1994 ACM Conference on Computer Supported Cooperative Work. 1994. p. 345-358.

- [SGP98] SCHILIT, B.; GOLOVCHINSKY, G.; PRICE, M. **Beyond paper: supporting active reading with free form digital ink annotations**. In: CHI'98 Conference Proceedings, ACM Press. 1998. p.249-256.

- [SMIL08] **Synchronized Multimedia Integration Language (SMIL)**. Disponível na WEB em: <<http://www.w3.org/AudioVideo/>>. Acessado em Abril, 2008.

- [Soar00] SOARES, L. F. G. **Modelo de Contextos Aninhados Versão 2.3**. relatório Técnico do Laboratório TeleMídia, Departamento de Informática, PUC-Rio. Rio de Janeiro. 2000.

- [Soar06] SOARES, L. F. G. **Notas de aula. Disciplina INF2801 – Fundamentos de Sistemas Multimídia e Hipermídia**. PUC-Rio, Período 2006.2. 2006.

- [ST94] SCHILIT, B. N.; THEIMER, M. M. **Disseminating Active Map Information to Mobile Hosts**. In: Proceedings of IEEE Network, 8(5). Sep., 1994. p. 22-32.

- [TA04] TRUONG, K. N.; ABOWD, G. D. **Inca: A software infrastructure to facilitate the construction and evolution of ubiquitous capture & access applications**. 2004.

- [TA99] TRUONG, K. N.; ABOWD, G. D. **StuPad: integrating student notes with class lectures**. In: CHI'99 Conference Proceedings. NY, USA. 1999. p. 208-209.

- [TAB01] TRUONG, K. N.; ABOWD, G. D.; BROTHERTON, J. A. **Who, What, When, Where, How: Design Issues of Capture & Access**

Applications. In: Proceedings of Ubicomp 2001: Ubiquitous Computing. 2001. 2001. p. 209-224.

- [Truy05] TRUYENQUE, M. A. Q. **Uma Aplicação de Visão Computacional que Utiliza Gestos da Mão para Interagir com o Computador.** Dissertação de Mestrado. Departamento de Informática, PUC-Rio. Rio de Janeiro, Brasil. 2005.
- [TS06a] TESIC, J.; SMITH, J. R. **Efficient summarizing of multimedia archives using cluster labeling.** In: 5th International Conference on Image and Video Retrieval, CIVR 2006. IBM T. J. Watson Research Center, Hawthorne, NY, USA. Jul., 2006. pp. 518-520.
- [TS06b] TESIC, J.; SMITH, J. R. **Semantic labeling of multimedia content clusters.** In: IEEE International Conference on Multimedia and Expo. 2006. pp. 1493-1496.
- [Viei04] VIEIRA, V. H. **Integração de Agenda e Suporte a Documentação de Projetos para Grupos ao Sistema de Computação ubíqua iClass.** Dissertação de Mestrado. ICMC, USP. 2005.
- [Weis91] WEISER, M. **The computer for the twenty-first century.** Scientific American. Set., 1991. p. 94-100.
- [Weis93] WEISER, M. **Some computer science issues in ubiquitous computing.** Communications of the ACM. 1993. p. 36(7):75-84.
- [Xsx01] XIE, W.; SHI, Y.; XU, G. **Smart Classroom – an Intelligent Environment for distant education.** Lecture Notes in Computer Science. Volume 2195. 2001.
- [YLKG06] YEH, R.; LIAO, C.; KLEMMER, S.; GUIMBRETIERE, F.; LEE, B. et al. **Butterflynet: a mobile capture and access system for field biology research.** In: CHI '06: Proceedings of the SIGCHI conference on Human Factors in computing systems. New York, NY, USA. ACM Press. 2006. p. 571-580.

Apêndice A

CAS XML Schema

O xml schema ilustrado nesse apêndice define a estrutura dos documentos internos do CAS utilizados antes da transformação aplicada para geração dos documentos NCL. As principais seções desse documento são:

- *CaptureInfo*: reúne algumas informações gerais do evento como o seu código interno (*EventID*) e data e hora de início (*StartDateTime*).
- *CaptureMedia*: indica quais mídias foram capturadas (*type*), onde estão os arquivos que representam aquela mídia (*src*) e a ordem de exibição (*seq*), útil quando são gerados vários arquivos de vídeo, por exemplo, dado alguma limitação de tamanho máximo do mesmo.
- *PresentationInfo*: informações da apresentação PowerPoint®, sejam estas extraídas do documento original ou capturadas durante o evento.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema id="CAS" xmlns=""
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:msdata="urn:schemas-microsoft-com:xml-msdata">
  <xs:element name="CaptureInfo">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="EventID" type="xs:string" minOccurs="0"
/>
        <xs:element name="StartDateTime" type="xs:string"
minOccurs="0" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="CaptureMedia">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Media" minOccurs="0"
maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="Start" type="xs:string"
minOccurs="0" msdata:Ordinal="0" />
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```

        <xs:element name="End" type="xs:string"
minOccurs="0" msdata:Ordinal="1" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="CAS" msdata:IsDataSet="true"
msdata:Locale="en-US">
  <xs:complexType>
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element ref="CaptureInfo" />
      <xs:element ref="CaptureMedia" />
      <xs:element name="PresentationInfo">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="PPTFileName" type="xs:string"
minOccurs="0" />
            <xs:element name="NumberOfSlides" type="xs:string"
minOccurs="0" />
            <xs:element name="Slide" minOccurs="0"
maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="SlideTitle" type="xs:string"
minOccurs="0" msdata:Ordinal="0" />
                </xs:sequence>
                <xs:attribute name="SlideNumber"
type="xs:string" />
                <xs:attribute name="BeginOfContext"
type="xs:string" />
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="SpeedCarAudio">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="CaptureInfo" minOccurs="0"
maxOccurs="unbounded" />
            <xs:element ref="CaptureMedia" minOccurs="0"
maxOccurs="unbounded" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="SpeedCarVideo">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="CaptureInfo" minOccurs="0"
maxOccurs="unbounded" />
            <xs:element ref="CaptureMedia" minOccurs="0"
maxOccurs="unbounded" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="SpeedCarPPT">

```

```

        <xs:complexType>
          <xs:sequence>
            <xs:element name="SlideShow" minOccurs="0"
maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="SlideChange" minOccurs="0"
maxOccurs="unbounded">
                    <xs:complexType>
                      <xs:sequence>
                        <xs:element name="Slide"
type="xs:string" minOccurs="0" msdata:Ordinal="0" />
                        <xs:element name="Start"
type="xs:string" minOccurs="0" msdata:Ordinal="1" />
                        <xs:element name="End" type="xs:string"
minOccurs="0" msdata:Ordinal="2" />
                      </xs:sequence>
                      <xs:attribute name="seq" type="xs:string"
/>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:choice>
    </xs:complexType>
  </xs:element>
</xs:schema>

```

Apêndice B

Primeiro Evento do Seminário de Sistemas Distribuídos

Nesse apêndice são ilustrados todos os documentos gerados pelo CAS para um mesmo evento, no caso, o Primeiro Evento do Seminário de Sistemas Distribuídos descrito na subseção 6.2.2. É interessante observar, por exemplo, que os tempos de início de captura das mídias (*StartDateTime*) não são necessariamente os mesmos entre as mídias capturadas. Os documentos dos SpeedCars foram gerados durante a captura enquanto os demais foram gerados na fase de pós-produção.

B.1 SpeedCar Audio XML

No arquivo XML gerado pelo SpeedCar Audio, encontramos a identificação do evento (*EventID*) que neste caso é "62" e o elemento *CaptureMedia* com as informações relevantes da captura: o tipo indicado, no caso "*audio*", o nome do arquivo com a mídia propriamente dita e o identificador da sequência utilizado caso houvesse mais de uma mídia de áudio.

```
<?xml version="1.0"?>
<CAS>
  <SpeedCarAudio>
    <CaptureInfo>
      <EventID>62</EventID>
    </CaptureInfo>
    <CaptureMedia>
      <Media type="audio" src="audio.wav" seq="1">
        <StartDateTime>19/3/2008 15:22:21</StartDateTime>
        <EndDateTime>19/3/2008 16:22:50</EndDateTime>
      </Media>
    </CaptureMedia>
  </SpeedCarAudio>
</CAS>
```

B.2 SpeedCar D-Link XML (Câmera 1)

O arquivo XML gerado pelo SpeedCar Video segue a mesma estrutura do arquivo apresentado anteriormente de áudio. Observe que nesse caso o valor esperado para o atributo do tipo de mídia (*type*) passa a ser "video".

```
<?xml version="1.0"?>
<CAS>
  <SpeedCar>
    <CaptureInfo>
      <EventID>62</EventID>
    </CaptureInfo>
    <CaptureMedia>
      <Media type="video" src="cam1.avi" seq="1">
        <StartDateTime>19/3/2008 15:26:37</StartDateTime>
      </Media>
    </CaptureMedia>
  </SpeedCar>
</CAS>
```

B.3 SpeedCar D-Link XML (Câmera 2)

O arquivo XML gerado pelo SpeedCar Video para a segunda câmera D-Link utilizada neste evento possui a mesma estrutura e apenas por mero acaso possui o tempo de início de gravação (*StartDateTime*) idêntico ao da primeira câmera. Em parte, isso se deve ao fato que as capturas das câmeras neste evento foram centralizadas num mesmo computador.

```
<?xml version="1.0"?>
<CAS>
  <SpeedCar>
    <CaptureInfo>
      <EventID>62</EventID>
    </CaptureInfo>
    <CaptureMedia>
      <Media type="video" src="cam2.avi" seq="1">
        <StartDateTime>19/3/2008 15:26:37</StartDateTime>
      </Media>
    </CaptureMedia>
  </SpeedCar>
</CAS>
```

B.4 SpeedCar PPT XML

Nesse arquivo é interessante observar que o identificador do evento é o mesmo que os anteriores ("62"), que o tipo da mídia mudou indicando que ele se refere ao Microsoft PowerPoint® e, que temos um novo elemento XML chamado "*SlideShow*". Este elemento é necessário para esta mídia, já que desejamos um maior grau de granularidade com as informações de cada *slide*. Os tempos dos slides são relativos à data e hora de início de captura da mídia.

```
<?xml version="1.0"?>
<CAS>
  <SpeedCar>
    <CaptureInfo>
      <EventID>62</EventID>
    </CaptureInfo>
    <CaptureMedia>
      <Media type="application/vnd.ms-powerpoint" src="R-OSGi.ppt"
seq="1">
        <StartDateTime>19/03/2008 15:14:44</StartDateTime>
        <SlideShow>
          <SlideChange seq="1">
            <Slide>1</Slide>
            <Start>0</Start>
            <End>35,412</End>
          </SlideChange>
          <SlideChange seq="2">
            <Slide>2</Slide>
            <Start>35,412</Start>
            <End>67,158</End>
          </SlideChange>
          <SlideChange seq="3">
            <Slide>3</Slide>
            <Start>67,158</Start>
            <End>177,1068</End>
          </SlideChange>
          <SlideChange seq="4">
            <Slide>4</Slide>
            <Start>177,1068</Start>
            <End>293,1708</End>
          </SlideChange>
          <SlideChange seq="5">
            <Slide>5</Slide>
            <Start>293,1708</Start>
            <End>486,0648</End>
          </SlideChange>
          <SlideChange seq="6">
            <Slide>6</Slide>
            <Start>486,0648</Start>
            <End>643,11</End>
          </SlideChange>
          <SlideChange seq="7">
            <Slide>7</Slide>
            <Start>643,11</Start>
```

```

        <End>692,172</End>
    </SlideChange>
    <SlideChange seq="8">
        <Slide>8</Slide>
        <Start>692,172</Start>
        <End>819,2184</End>
    </SlideChange>
    <SlideChange seq="9">
        <Slide>9</Slide>
        <Start>819,2184</Start>
        <End>918,4812</End>
    </SlideChange>
    <SlideChange seq="10">
        <Slide>10</Slide>
        <Start>918,4812</Start>
        <End>988,416</End>
    </SlideChange>
    <SlideChange seq="11">
        <Slide>9</Slide>
        <Start>988,416</Start>
        <End>995,826</End>
    </SlideChange>
    <SlideChange seq="12">
        <Slide>10</Slide>
        <Start>995,826</Start>
        <End>1032,5796</End>
    </SlideChange>
    <SlideChange seq="13">
        <Slide>11</Slide>
        <Start>1032,5796</Start>
        <End>1219,218</End>
    </SlideChange>
    <SlideChange seq="14">
        <Slide>12</Slide>
        <Start>1219,218</Start>
        <End>1283,1</End>
    </SlideChange>
    <SlideChange seq="15">
        <Slide>13</Slide>
        <Start>1283,1</Start>
        <End>1319,8068</End>
    </SlideChange>
    <SlideChange seq="16">
        <Slide>12</Slide>
        <Start>1319,8068</Start>
        <End>1328,5272</End>
    </SlideChange>
    <SlideChange seq="17">
        <Slide>13</Slide>
        <Start>1328,5272</Start>
        <End>1494,7764</End>
    </SlideChange>
    <SlideChange seq="18">
        <Slide>13</Slide>
        <Start>1494,7764</Start>
        <End>2366,4888</End>
    </SlideChange>
    <SlideChange seq="19">
        <Slide>14</Slide>
        <Start>2366,4888</Start>
        <End>3352,7832</End>

```

```

        </SlideChange>
    </SlideShow>
</Media>
</CaptureMedia>
</SpeedCar>
</CAS>

```

B.5 PresentationInfo XML

Esse arquivo é gerado pelo serviço de pós-produção após a aplicação de um transformador. Ele agrega o texto extraído do arquivo Microsoft PowerPoint®, tanto do conteúdo (*SlideContent*) quanto das notas (*SlideNotes*) de cada slide, além de um atributo que indica se aquele slide representa o início de um contexto (*BeginOfContext*).

```

<?xml version="1.0"?>
<CAS>
  <PresentationInfo>
    <PPTFileName>R-OSGi.ppt</PPTFileName>
    <NumberOfSlides>14</NumberOfSlides>
    <Slide SlideNumber="1" BeginOfContext="true">
      <SlideTitle>R-OSGi&#xB;Distributed Applications
through&#xB;Software Modularization&#xB;&#xB;[Jan S. Rellermeyer,
Gustavo Alono, and Timothy Roscoe]</SlideTitle>
      <SlideContent>
        Seminário de Sistemas Distribuídos
        19/03/2008

        Marcelo Malcher
      </SlideContent>
      <SlideNotes />
    </Slide>
    <Slide SlideNumber="2" BeginOfContext="true">
      <SlideTitle>Summary</SlideTitle>
      <SlideContent>
        Introduction
        Background
        OSGi
        R-OSGi
        Implementation
        R-OSGi Deployment Tool (Eclipse plugin)
        Conclusion
        References
      </SlideContent>
      <SlideNotes />
    </Slide>
    <Slide SlideNumber="3" BeginOfContext="true">
      <SlideTitle>Introduction (i)</SlideTitle>
      <SlideContent>
        Modular Design
        Module Management Systems: handle loading and unloading of
modular programs units at runtime
        Based on OSGi Specification

```

```

Release 4 - Version 4.1 (May, 2007)
From OSGi Alliance:
  OSGi technology is the dynamic module system for Java™
  OSGi technology is Universal Middleware. OSGi technology
provides a service-oriented, component-based environment for
developers and offers standardized ways to manage the software
lifecycle. These capabilities greatly increase the value of a wide
range of computers and devices that use the Java platform.
  </SlideContent>
  <SlideNotes />
</Slide>
<Slide SlideNumber="4">
  <SlideTitle>Introduction (ii)</SlideTitle>
  <SlideContent>
    OSGi:
    Interface of a service is the shared knowledge between
interacting bundles, the concrete implementation of a service
remains a black box.
    In the context of networked environments, the service-
oriented design of OSGi is ideal for building distributed
applications.
    Strict distinction between interface and implementation.
    Loose coupling between components.
    Designed to handle unloading of modules at any time.

  </SlideContent>
  <SlideNotes />
</Slide>
<Slide SlideNumber="5">
  <SlideTitle>Introduction (iii)</SlideTitle>
  <SlideContent>
    Possibility to represent communication-related failures as
local module unloading events.
    Remoting-OSGi (R-OSGi) is a distributed middleware
platform that can transparently distribute parts of an application
by simply distributing its software modules.
    R-OSGi's contributions:
    Seamless embedding in OSGi
    Reliability
    Generality
    Portability
    Adaptivity
    Efficiency
  </SlideContent>
  <SlideNotes />
</Slide>
<Slide SlideNumber="6" BeginOfContext="true">
  <SlideTitle>Background</SlideTitle>
  <SlideContent>
    Models and frameworks for building distributed systems:
    Remove invocations identical to local procedures or method
calls:
    RPC, Java Remote Method Invocation, CORBA, DCOM.
    Efforts to add distribution to OSGi:
    Jini (R3)
    Central LUS (Lookup Service) requires RMI
    Violates generality: small mobile and devices often don't
have RMI
    Problems with types: attributes in Jini are arrays of
Objects implementing the Entry interface, whereas in OSGi,
attributes are modeled as key/value pairs of arbitrary types.

```

UPnP (R4)
 Can only make use of a subset of the standard SOAP datatypes
 It is not possible to pass complex Java objects as arguments for UPnP actions since extensive type mapping is not supported
 Use of the XML format and SOAP envelopes lead to a significantly decreased performance
 Both approaches are "invasive"

```
</SlideContent>
<SlideNotes />
</Slide>
<Slide SlideNumber="7" BeginOfContext="true">
  <SlideTitle>OSGi (i)</SlideTitle>
  <SlideContent>
```

Is both a programming model to develop Java applications from modular units (bundles) decoupled through service interfaces, and a runtime infrastructure or framework for controlling life cycle of bundles.
 Keeps track of dependencies of services between modules.

OSGi Services:
 OSGi implements a centralized service-oriented architecture with loosely coupled services.

```
</SlideContent>
<SlideNotes />
</Slide>
<Slide SlideNumber="8">
  <SlideTitle>OSGi (ii)</SlideTitle>
  <SlideContent>
```

Access to service objects must be mediated and controlled because services might not be present or even disappear during the life cycle of the service's client.
 OSGi sends events whenever the state of a service changes.

The OSGi Whiteboard Pattern
 Use of the OSGi service registry
 Event sources can retrieve all registered listeners whenever an event occurs.
 The coupling between listener and source is reduced to minimum.

```
</SlideContent>
<SlideNotes />
</Slide>
<Slide SlideNumber="9" BeginOfContext="true">
  <SlideTitle>R-OSGi (i)</SlideTitle>
  <SlideContent>Allows a centralized application to be transparently distributed at service boundaries by using proxies.</SlideContent>
  <SlideNotes />
</Slide>
<Slide SlideNumber="10">
  <SlideTitle>R-OSGi (ii)</SlideTitle>
  <SlideContent>
```

Techniques to achieve the goal of transparency:
 Dynamic Service Proxies
 Service Registration and Location
 Transparent Distribution
 Type Injection

```

    </SlideContent>
    <SlideNotes />
  </Slide>
  <Slide SlideNumber="11" BeginOfContext="true">
    <SlideTitle>Implementation</SlideTitle>
    <SlideContent>
      Distributed Service Registry
      Service Location Protocol (SLP)
      Network Channels and Message Transport
      Proxy Generation
      Method Invocation
      Remote Events
      EventAdmin
      Presentation
    </SlideContent>
    <SlideNotes />
  </Slide>
  <Slide SlideNumber="12" BeginOfContext="true">
    <SlideTitle>R-OSGi Deployment Tool</SlideTitle>
    <SlideContent />
    <SlideNotes />
  </Slide>
  <Slide SlideNumber="13" BeginOfContext="true">
    <SlideTitle>Conclusions</SlideTitle>
    <SlideContent>
      R-OSGi allows distributed applications to be built using
      the same modularity features of OSGi.
      Allows existing OSGi application to be transparently
      distributed along module boundaries.
    </SlideContent>
  </Slide>
  <Slide SlideNumber="14" BeginOfContext="true">
    <SlideTitle>References</SlideTitle>
    <SlideContent>
      Main article:
      R-OSGi: Distributed Applications through Software
      Modularization
      Other articles:
      Services Everywhere OSGi in Distributed Environments
      Building, Deploying, and Monitoring Distributed
      Applications with Eclipse and R-OSGi
      OSGi Alliance web site:
      http://www.osgi.org
    </SlideContent>
    <SlideNotes />
  </Slide>
</PresentationInfo>
</CAS>

```

B.6 NCL Gerada para o Evento

Esse arquivo é o resultado final do serviço de pós-processamento, é a NCL final que é disponibilizada para os usuários recuperarem pelo site junto com as mídias e visualizarem no player NCL. Todas as seções do documento estão comentadas entre "<!--" e "-->" descrevendo o seu conteúdo ou propósito. É interessante observar que as mídias utilizadas foram convertidas, pois não coincidem com os formatos indicados nos arquivos XML anteriores.

```
<?xml version="1.0" encoding="ISO-8859-1"?>

<!--+++++
!
! Este documento foi gerado automaticamente com
! o CAS (Capture & Access Service)
!
! Para maiores informacoes sobre o CAS consulte:
! http://cas.portella.com.br ou envie um e-mail
! para Felipe Portella (felipe@portella.com.br).
!
! Dados deste evento:
!     CAS EventID: 61
!     Titulo do evento: R-OSGi Distributed Applications through
Software Modularization
!     Gravado em: 19/03/2008
!
!+++++-->

<!--+++++
! CABECALHO NCL:
! define as URIs dos esquemas da NCL
!+++++-->

<ncl id="CAS" xmlns="http://www.ncl.org.br/NCL3.0/EDTVProfile">

<!--+++++
! CABECALHO DO PROGRAMA
! contem as bases de regioes, de descritores e de conectores
!+++++-->
>

<head>

    <!--+++++
    ! BASE DE REGIOES:
    ! define as regioes na tela onde as midias sao apresentadas
    !+++++-->

    <regionBase>

        <region id="rHDTV" width="100%" height="100%" zIndex="0" >
```

```

<region id="rTopMenuHome" left="05%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuDoc" left="10%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuCam1" left="15%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuCam2" left="20%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuCam3" left="25%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuMic" left="30%" top="3%"
width="2.65625%" height="3.3203125%" />
<region id="rTopMenuExit" left="35%" top="3%"
width="2.65625%" height="3.3203125%" />

<region id="rScreen" left="5%" top="8%" width="90%"
height="65%" zIndex="0" >

    <region id="rSlides" left="0" top="0"
width="75%" height="100%" zIndex="0" />
    <region id="rCam1" left="75.3%" top="0"
width="24.24%" height="33.33%" /> <!-- width="352" height="256" --
>
    <region id="rCam2" left="75.3%" top="33.33%"
width="24.24%" height="33.33%" />
    <region id="rCam3" left="75.3%" top="66.66%"
width="24.24%" height="33.33%" />
    <region id="rAudio" left="0" top="0" width="0"
height="0" />

    <region id="rContextMenuLeftCol" left="2%" top="0"
height="100%" zIndex="1">
    <region id="rContextMenuOption1" top="09%" width="24"
height="28"/>
    <region id="rContextMenuOption2" top="24%" width="24"
height="28"/>
    <region id="rContextMenuOption3" top="39%" width="24"
height="28"/>
    <region id="rContextMenuOption4" top="54%" width="24"
height="28"/>
    <region id="rContextMenuOption5" top="69%" width="24"
height="28"/>
    <region id="rContextMenuOption6" top="84%" width="24"
height="28"/>
    <region id="rContextMenuOption1Image" top="05%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption2Image" top="20%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption3Image" top="35%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption4Image" top="50%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption5Image" top="65%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption6Image" top="80%"
left="34" width="107" height="80" zIndex="5"/>
    <region id="rContextMenuOption1Text" top="05%"
left="150" width="350" height="80" zIndex="5"/>
    <region id="rContextMenuOption2Text" top="20%"
left="150" width="350" height="80" zIndex="5"/>

```

```

        <region id="rContextMenuOption3Text" top="35%"
left="150" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption4Text" top="50%"
left="150" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption5Text" top="65%"
left="150" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption6Text" top="80%"
left="150" width="350" height="80" zIndex="5"/>
        </region>

        <region id="rContextMenuRightCol" left="50%" top="0"
height="100%" zIndex="1">
        <region id="rContextMenuOption7" top="09%" width="24"
height="28"/>
        <region id="rContextMenuOption8" top="24%" width="24"
height="28"/>
        <region id="rContextMenuOption9" top="39%" width="24"
height="28"/>
        <region id="rContextMenuOption10" top="54%" width="24"
height="28"/>
        <region id="rContextMenuOption11" top="69%" width="24"
height="28"/>
        <region id="rContextMenuOption12" top="84%" width="24"
height="28"/>
        <region id="rContextMenuOption7Image" top="05%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption8Image" top="20%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption9Image" top="35%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption10Image" top="50%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption11Image" top="65%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption12Image" top="80%"
left="34" width="107" height="80" zIndex="5"/>
        <region id="rContextMenuOption7Text" top="05%"
left="145" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption8Text" top="20%"
left="145" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption9Text" top="35%"
left="145" width="350" height="80" zIndex="5"/>
        <region id="rContextMenuOption10Text" top="50%"
left="145" width="350" height="80" zIndex="5"/>
        </region>

    </region>

</region>

</regionBase>

<!--+++++
! BASE DE DESCRITORES:
! define como as midias sao apresentadas
!+++++-->

<descriptorBase>

    <descriptor id="dHDTV" region="rHDTV" />
    <descriptor id="dScreen" region="rScreen">

```

```

        <descriptorParam name="visible" value="true" />
    </descriptor>
    <descriptor id="dSplash" region="rSlides" explicitDur="2s"
/>

    <descriptor id="dSlides" region="rSlides" />
    <descriptor id="dAudio" region="rAudio">
        <descriptorParam name="soundLevel" value="1" />
    </descriptor>
    <descriptor id="dCam1" region="rCam1">
        <descriptorParam name="soundLevel" value="0" />
    </descriptor>
    <descriptor id="dCam2" region="rCam2">
        <descriptorParam name="soundLevel" value="0" />
    </descriptor>
    <descriptor id="dCam3" region="rCam3">
        <descriptorParam name="soundLevel" value="0" />
    </descriptor>

    <descriptor id="d_icon_home" region="rTopMenuHome"
focusIndex="1" moveRight="2" moveLeft="7" focusBorderWidth="3"
focusSrc="media/icons/home_orange.jpg" />
    <descriptor id="d_icon_document" region="rTopMenuDoc"
focusIndex="2" moveRight="3" moveLeft="1" focusBorderWidth="3"
focusSrc="media/icons/document_red.jpg" />
    <descriptor id="d_icon_cameral" region="rTopMenuCam1"
focusIndex="3" moveRight="4" moveLeft="2" focusBorderWidth="3"
focusSrc="media/icons/camcorder_blue.jpg" />
    <descriptor id="d_icon_camera2" region="rTopMenuCam2"
focusIndex="4" moveRight="5" moveLeft="3" focusBorderWidth="3"
focusSrc="media/icons/camcorder_yellow.jpg" />
    <descriptor id="d_icon_camera3" region="rTopMenuCam3"
focusIndex="5" moveRight="6" moveLeft="4" focusBorderWidth="3"
focusSrc="media/icons/movie_camera_green.jpg" />
    <descriptor id="d_icon_microphone" region="rTopMenuMic"
focusIndex="6" moveRight="7" moveLeft="5" focusBorderWidth="3"
focusSrc="media/icons/microphone_orange.jpg" />
    <descriptor id="d_icon_exit" region="rTopMenuExit"
focusIndex="7" moveRight="1" moveLeft="6" focusBorderWidth="3"
focusSrc="media/icons/door_red.jpg" />

    <descriptor id="dOption1" region="rContextMenuOption1"
focusIndex="1" moveDown="2" moveUp="12" moveRight="7"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption2" region="rContextMenuOption2"
focusIndex="2" moveDown="3" moveUp="1" moveRight="8"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption3" region="rContextMenuOption3"
focusIndex="3" moveDown="4" moveUp="2" moveRight="9"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption4" region="rContextMenuOption4"
focusIndex="4" moveDown="5" moveUp="3" moveRight="10"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption5" region="rContextMenuOption5"
focusIndex="5" moveDown="6" moveUp="4" moveRight="11"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption6" region="rContextMenuOption6"
focusIndex="6" moveDown="7" moveUp="5" moveRight="12"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption7" region="rContextMenuOption7"
focusIndex="7" moveDown="8" moveUp="6" moveLeft="1"
focusBorderWidth="0" focusSrc="media/play.png"/>

```

```

    <descriptor id="dOption8" region="rContextMenuOption8"
focusIndex="8" moveDown="9" moveUp="7" moveLeft="2"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption9" region="rContextMenuOption9"
focusIndex="9" moveDown="10" moveUp="8" moveLeft="3"
focusBorderWidth="0" focusSrc="media/play.png"/>
    <descriptor id="dOption10" region="rContextMenuOption10"
focusIndex="10" moveDown="11" moveUp="9" moveLeft="4"
focusBorderWidth="0" focusSrc="media/play.png"/>

    <descriptor id="dOption1Image"
region="rContextMenuOption1Image" />
    <descriptor id="dOption2Image"
region="rContextMenuOption2Image" />
    <descriptor id="dOption3Image"
region="rContextMenuOption3Image" />
    <descriptor id="dOption4Image"
region="rContextMenuOption4Image" />
    <descriptor id="dOption5Image"
region="rContextMenuOption5Image" />
    <descriptor id="dOption6Image"
region="rContextMenuOption6Image" />
    <descriptor id="dOption7Image"
region="rContextMenuOption7Image" />
    <descriptor id="dOption8Image"
region="rContextMenuOption8Image" />
    <descriptor id="dOption9Image"
region="rContextMenuOption9Image" />
    <descriptor id="dOption10Image"
region="rContextMenuOption10Image" />

    <descriptor id="dOption1Text"
region="rContextMenuOption1Text" />
    <descriptor id="dOption2Text"
region="rContextMenuOption2Text" />
    <descriptor id="dOption3Text"
region="rContextMenuOption3Text" />
    <descriptor id="dOption4Text"
region="rContextMenuOption4Text" />
    <descriptor id="dOption5Text"
region="rContextMenuOption5Text" />
    <descriptor id="dOption6Text"
region="rContextMenuOption6Text" />
    <descriptor id="dOption7Text"
region="rContextMenuOption7Text" />
    <descriptor id="dOption8Text"
region="rContextMenuOption8Text" />
    <descriptor id="dOption9Text"
region="rContextMenuOption9Text" />
    <descriptor id="dOption10Text"
region="rContextMenuOption10Text" />

</descriptorBase>

<!--+++++
! BASE DE CONECTORES:
! definem o comportamento dos elos
!+++++-->

<connectorBase>

```

```

    <importBase alias="connectors"
documentURI="media/connectorBase.ncl"/>
    </connectorBase>

</head>

<!--+++++
!   CORPO DO PROGRAMA:
!   define as midias e estrutura do programa
!+++++-->

<body>

    <!--+++++
    !   PONTO DE ENTRADA:
    !   indica o componente onde o programa inicia
    !+++++-->

    <port id="pInicio" component="mHDTV" />

    <!--+++++
    !   MIDIAS GERAIS
    !   define o local dos arquivos de midia basicas e as asso-
    !   cia com seus descritores
    !+++++-->

    <!-- node settings para colocar o foco como default em
ContextMenuOption1-->
    <media id="setttings" type="application/x-ginga-settings">
        <property name="currentFocus" value="1"/>
    </media>

    <media id="mHDTV" src="media/HDTV.jpg" descriptor="dHDTV" />

    <media id="mSplash" src="media/splash_screen.jpg"
descriptor="dSplash" >
        <property name="bounds" />
    </media>

    <media id="mCam1" src="media/cam1.mpg" descriptor="dCam1" >
        <area id="aContextMenu1" begin="0s" end="35.41s"/>
        <area id="aContextMenu2" begin="35.41s" end="67.16s"/>
        <area id="aContextMenu3" begin="67.16s" end="486.06s"/>
        <area id="aContextMenu4" begin="486.06s" end="643.11s"/>
        <area id="aContextMenu5" begin="643.11s" end="819.22s"/>
        <area id="aContextMenu6" begin="819.22s" end="1032.58s"/>
        <area id="aContextMenu7" begin="1032.58s" end="1219.22s"/>
        <area id="aContextMenu8" begin="1219.22s" end="1283.1s"/>
        <area id="aContextMenu9" begin="1283.1s" end="2366.49s"/>
        <area id="aContextMenu10" begin="2366.49s" end="3352.78s"/>
    </media>

    <media id="mCam2" src="media/cam2.mpg" descriptor="dCam2" />
    <media id="mCam3" src="media/cam3.mpg" descriptor="dCam3" />
    <media id="mAudio" src="media/audio.mp3" descriptor="dAudio"/>

    <!--+++++
    !   ELOS GERAIS
    !   define os elos que regem o controle geral
    !+++++-->

```

```

<!-- inicio da gravacao ... a porta de entrada eh a HDTV -->
<link xconnector="connectors#onBegin1StartN">
  <bind component="mHDTV" role="onBegin" />
  <bind component="mSplash" role="start" />
</link>

<!-- apos o splash screen devemos mostrar o menu de contexto e a
opcao de sair do top menu -->
<link xconnector="connectors#onEnd1StartN">
  <bind component="mSplash" role="onEnd" />
  <bind component="topMenu" interface="pMenuExit" role="start"
/>
  <bind component="ContextMenu" role="start" />
</link>

<!-- ancora para controle da parada de todas as midias -->
<link xconnector="connectors#onEnd1StopN">
  <bind component="mHDTV" role="onEnd" />
  <bind component="mSplash" role="stop" />
  <bind component="mCam1" role="stop" />
  <bind component="mCam2" role="stop" />
  <bind component="mCam3" role="stop" />
  <bind component="mAudio" role="stop" />
</link>

<!--+++++
! CONTEXTO TOP MENU
! menu superior de controle
!+++++-->

  <context id="topMenu">
    <port id="pMenuHome" component="mIconHome"/>
    <port id="pMenuDoc" component="mIconDoc" />
    <port id="pMenuCam1" component="mIconCam1"/>
    <port id="pMenuCam2" component="mIconCam2"/>
    <port id="pMenuCam3" component="mIconCam3"/>
    <port id="pMenuMic" component="mIconMic" />
    <port id="pMenuExit" component="mIconExit"/>
    <media id="mIconHome" src="media/icons/home_orange.jpg"
descriptor="d_icon_home" />
    <media id="mIconDoc" src="media/icons/document_red.jpg"
descriptor="d_icon_document" />
    <media id="mIconCam1" src="media/icons/camcorder_blue.jpg"
descriptor="d_icon_camera1" />
    <media id="mIconCam2"
src="media/icons/camcorder_yellow.jpg" descriptor="d_icon_camera2"
/>
    <media id="mIconCam3"
src="media/icons/movie_camera_green.jpg"
descriptor="d_icon_camera3" />
    <media id="mIconMic"
src="media/icons/microphone_orange.jpg"
descriptor="d_icon_microphone" />
    <media id="mIconExit" src="media/icons/door_red.jpg"
descriptor="d_icon_exit" />
  </context>

  <!--+++++
! ELOS DO TOP MENU

```

```

! define os elos que regem o controle do menu
!+++++++----->

<!-- exit -->
<link xconnector="connectors#onSelection1StopN">
  <bind component="topMenu" interface="pMenuExit"
role="onSelection"/>
  <bind component="mHDTV" role="stop"/>
</link>

<!-- ancora para controle da parada -->
<link xconnector="connectors#onEnd1StopN">
  <bind component="mHDTV" role="onEnd" />
  <bind component="topMenu" role="stop" />
</link>

<!--+++++++
! CONTEXTO CONTEXT MENU
! menu de navegacao por assuntos
!+++++++----->

<context id="ContextMenu">
  <port id="pContextMenu1" component="mOption1"/>
  <port id="pContextMenu2" component="mOption2"/>
  <port id="pContextMenu3" component="mOption3"/>
  <port id="pContextMenu4" component="mOption4"/>
  <port id="pContextMenu5" component="mOption5"/>
  <port id="pContextMenu6" component="mOption6"/>
  <port id="pContextMenu7" component="mOption7"/>
  <port id="pContextMenu8" component="mOption8"/>
  <port id="pContextMenu9" component="mOption9"/>
  <port id="pContextMenu10" component="mOption10"/>

  <port id="pOption1Image" component="mOption1Image"/>
  <port id="pOption2Image" component="mOption2Image"/>
  <port id="pOption3Image" component="mOption3Image"/>
  <port id="pOption4Image" component="mOption4Image"/>
  <port id="pOption5Image" component="mOption5Image"/>
  <port id="pOption6Image" component="mOption6Image"/>
  <port id="pOption7Image" component="mOption7Image"/>
  <port id="pOption8Image" component="mOption8Image"/>
  <port id="pOption9Image" component="mOption9Image"/>
  <port id="pOption10Image" component="mOption10Image"/>

  <port id="pOption1Text" component="mOption1Text"/>
  <port id="pOption2Text" component="mOption2Text"/>
  <port id="pOption3Text" component="mOption3Text"/>
  <port id="pOption4Text" component="mOption4Text"/>
  <port id="pOption5Text" component="mOption5Text"/>
  <port id="pOption6Text" component="mOption6Text"/>
  <port id="pOption7Text" component="mOption7Text"/>
  <port id="pOption8Text" component="mOption8Text"/>
  <port id="pOption9Text" component="mOption9Text"/>
  <port id="pOption10Text" component="mOption10Text"/>

  <media id="mOption1" src="media/black.png"
descriptor="dOption1"/>
  <media id="mOption2" src="media/black.png"
descriptor="dOption2"/>
  <media id="mOption3" src="media/black.png"
descriptor="dOption3"/>

```

```

    <media id="mOption4"      src="media/black.png"
descriptor="dOption4"/>
    <media id="mOption5"      src="media/black.png"
descriptor="dOption5"/>
    <media id="mOption6"      src="media/black.png"
descriptor="dOption6"/>
    <media id="mOption7"      src="media/black.png"
descriptor="dOption7"/>
    <media id="mOption8"      src="media/black.png"
descriptor="dOption8"/>
    <media id="mOption9"      src="media/black.png"
descriptor="dOption9"/>
    <media id="mOption10"     src="media/black.png"
descriptor="dOption10"/>

    <media id="mOption1Image" src="media/Slide1.JPG"
descriptor="dOption1Image" />
    <media id="mOption2Image" src="media/Slide2.JPG"
descriptor="dOption2Image" />
    <media id="mOption3Image" src="media/Slide3.JPG"
descriptor="dOption3Image" />
    <media id="mOption4Image" src="media/Slide4.JPG"
descriptor="dOption4Image" />
    <media id="mOption5Image" src="media/Slide5.JPG"
descriptor="dOption5Image" />
    <media id="mOption6Image" src="media/Slide6.JPG"
descriptor="dOption6Image" />
    <media id="mOption7Image" src="media/Slide7.JPG"
descriptor="dOption7Image" />
    <media id="mOption8Image" src="media/Slide8.JPG"
descriptor="dOption8Image" />
    <media id="mOption9Image" src="media/Slide9.JPG"
descriptor="dOption9Image" />
    <media id="mOption10Image" src="media/Slide10.JPG"
descriptor="dOption10Image" />

    <media id="mOption1Text"  src="media/ContextMenu1.html"
descriptor="dOption1Text" type="text/html" />
    <media id="mOption2Text"  src="media/ContextMenu2.html"
descriptor="dOption2Text" type="text/html" />
    <media id="mOption3Text"  src="media/ContextMenu3.html"
descriptor="dOption3Text" type="text/html" />
    <media id="mOption4Text"  src="media/ContextMenu4.html"
descriptor="dOption4Text" type="text/html" />
    <media id="mOption5Text"  src="media/ContextMenu5.html"
descriptor="dOption5Text" type="text/html" />
    <media id="mOption6Text"  src="media/ContextMenu6.html"
descriptor="dOption6Text" type="text/html" />
    <media id="mOption7Text"  src="media/ContextMenu7.html"
descriptor="dOption7Text" type="text/html" />
    <media id="mOption8Text"  src="media/ContextMenu8.html"
descriptor="dOption8Text" type="text/html" />
    <media id="mOption9Text"  src="media/ContextMenu9.html"
descriptor="dOption9Text" type="text/html" />
    <media id="mOption10Text" src="media/ContextMenu10.html"
descriptor="dOption10Text" type="text/html" />

    </context>

    <!--+++++
    ! ELOS DO CONTEXT MENU

```

```

! define os elos que regem o controle geral
!+++++++-->

<!-- no inicio do ContextMenu devemos exibir o menu de saida da
apresentacao -->
<link xconnector="connectors#onBegin1StartN">
  <bind component="ContextMenu" role="onBegin" />
  <bind component="topMenu" interface="pMenuExit" role="start"/>
</link>

  <!-- ancora para controle da parada -->
<link xconnector="connectors#onEnd1StopN">
  <bind component="mHDTV" role="onEnd" />
  <bind component="ContextMenu" role="stop" />
</link>

<!-- ancoras para controle do inicio de cada contexto pela selecao
no menu & ancoras para na parada de cada contexto retornar ao menu
-->
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu1"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu1"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu2"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu2"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu3"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu3"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu4"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu4"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu5"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu5"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu6"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu6"
role="start"/>
</link>

```

```

<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu7"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu7"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu8"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu8"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu9"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu9"
role="start"/>
</link>
<link xconnector="connectors#onSelection1StopNStartN">
  <bind component="ContextMenu" interface="pContextMenu10"
role="onSelection"/>
  <bind component="ContextMenu" role="stop"/>
  <bind component="mCam1" interface="aContextMenu10"
role="start"/>
</link>

<link xconnector="connectors#onEnd1StopNStartN">
  <bind component="mCam1" interface="aContextMenu1"
role="onEnd"/>
  <bind component="Contexto1" role="stop"/>
  <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopNStartN">
  <bind component="mCam1" interface="aContextMenu2"
role="onEnd"/>
  <bind component="Contexto2" role="stop"/>
  <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopNStartN">
  <bind component="mCam1" interface="aContextMenu3"
role="onEnd"/>
  <bind component="Contexto3" role="stop"/>
  <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopNStartN">
  <bind component="mCam1" interface="aContextMenu4"
role="onEnd"/>
  <bind component="Contexto4" role="stop"/>
  <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopNStartN">
  <bind component="mCam1" interface="aContextMenu5"
role="onEnd"/>
  <bind component="Contexto5" role="stop"/>
  <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopNStartN">

```

```

    <bind component="mCam1" interface="aContextMenu6"
role="onEnd"/>
    <bind component="Contexto6" role="stop"/>
    <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEndIStopNStartN">
    <bind component="mCam1" interface="aContextMenu7"
role="onEnd"/>
    <bind component="Contexto7" role="stop"/>
    <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEndIStopNStartN">
    <bind component="mCam1" interface="aContextMenu8"
role="onEnd"/>
    <bind component="Contexto8" role="stop"/>
    <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEndIStopNStartN">
    <bind component="mCam1" interface="aContextMenu9"
role="onEnd"/>
    <bind component="Contexto9" role="stop"/>
    <bind component="ContextMenu" role="start"/>
</link>
<link xconnector="connectors#onEndIStopNStartN">
    <bind component="mCam1" interface="aContextMenu10"
role="onEnd"/>
    <bind component="Contexto10" role="stop"/>
    <bind component="ContextMenu" role="start"/>
</link>

    <!--+++++
    ! CONTEXTOS
    ! video + slides sincronizados e agrupados por assuntos
    !+++++-->
<context id="Contexto1">
    <media id="Contexto1_refer" refer="mCam1" newInstance="false">
        <area id="Contexto1_Area1" begin="0s" end="35.412s"/>
    </media>
    <media id="Contexto1_Slide1" src="media/Slide1.JPG"
descriptor="dSlides"/>

    <link xconnector="connectors#onBeginIStartN">
        <bind component="Contexto1_refer"
interface="Contexto1_Area1" role="onBegin"/>
        <bind component="Contexto1_Slide1" role="start"/>
    </link>
    <link xconnector="connectors#onEndIStopN">
        <bind component="Contexto1_refer"
interface="Contexto1_Area1" role="onEnd"/>
        <bind component="Contexto1_Slide1" role="stop"/>
    </link>
</context>

<context id="Contexto2">
    <media id="Contexto2_refer" refer="mCam1" newInstance="false">
        <area id="Contexto2_Area2" begin="35.412s" end="67.158s"/>
    </media>
    <media id="Contexto2_Slide2" src="media/Slide2.JPG"
descriptor="dSlides"/>

    <link xconnector="connectors#onBeginIStartN">

```

```

    <bind component="Contexto2_refer"
interface="Contexto2_Area2" role="onBegin"/>
    <bind component="Contexto2_Slide2" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">
    <bind component="Contexto2_refer"
interface="Contexto2_Area2" role="onEnd"/>
    <bind component="Contexto2_Slide2" role="stop"/>
  </link>
</context>

<context id="Contexto3">
  <media id="Contexto3_refer" refer="mCam1" newInstance="false">
    <area id="Contexto3_Area3" begin="67.158s" end="177.1068s"/>
    <area id="Contexto3_Area4" begin="177.1068s"
end="293.1708s"/>
    <area id="Contexto3_Area5" begin="293.1708s"
end="486.0648s"/>
  </media>
  <media id="Contexto3_Slide3" src="media/Slide3.JPG"
descriptor="dSlides"/>
  <media id="Contexto3_Slide4" src="media/Slide4.JPG"
descriptor="dSlides"/>
  <media id="Contexto3_Slide5" src="media/Slide5.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto3_refer"
interface="Contexto3_Area3" role="onBegin"/>
    <bind component="Contexto3_Slide3" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto3_refer"
interface="Contexto3_Area4" role="onBegin"/>
    <bind component="Contexto3_Slide3" role="stop"/>
    <bind component="Contexto3_Slide4" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto3_refer"
interface="Contexto3_Area5" role="onBegin"/>
    <bind component="Contexto3_Slide4" role="stop"/>
    <bind component="Contexto3_Slide5" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">
    <bind component="Contexto3_refer"
interface="Contexto3_Area5" role="onEnd"/>
    <bind component="Contexto3_Slide5" role="stop"/>
  </link>
</context>

<context id="Contexto4">
  <media id="Contexto4_refer" refer="mCam1" newInstance="false">
    <area id="Contexto4_Area6" begin="486.0648s" end="643.11s"/>
  </media>
  <media id="Contexto4_Slide6" src="media/Slide6.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto4_refer"
interface="Contexto4_Area6" role="onBegin"/>
    <bind component="Contexto4_Slide6" role="start"/>
  </link>
</context>

```

```

</link>
<link xconnector="connectors#onEnd1StopN">
  <bind component="Contexto4_refer"
interface="Contexto4_Area6" role="onEnd"/>
  <bind component="Contexto4_Slide6" role="stop"/>
</link>
</context>

<context id="Contexto5">
  <media id="Contexto5_refer" refer="mCam1" newInstance="false">
    <area id="Contexto5_Area7" begin="643.11s" end="692.172s"/>
    <area id="Contexto5_Area8" begin="692.172s"
end="819.2184s"/>
  </media>
  <media id="Contexto5_Slide7" src="media/Slide7.JPG"
descriptor="dSlides"/>
  <media id="Contexto5_Slide8" src="media/Slide8.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto5_refer"
interface="Contexto5_Area7" role="onBegin"/>
    <bind component="Contexto5_Slide7" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto5_refer"
interface="Contexto5_Area8" role="onBegin"/>
    <bind component="Contexto5_Slide7" role="stop"/>
    <bind component="Contexto5_Slide8" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">
    <bind component="Contexto5_refer"
interface="Contexto5_Area8" role="onEnd"/>
    <bind component="Contexto5_Slide8" role="stop"/>
  </link>
</context>

<context id="Contexto6">
  <media id="Contexto6_refer" refer="mCam1" newInstance="false">
    <area id="Contexto6_Area9" begin="819.2184s"
end="918.4812s"/>
    <area id="Contexto6_Area10" begin="918.4812s"
end="988.416s"/>
    <area id="Contexto6_Area11" begin="988.416s"
end="995.826s"/>
    <area id="Contexto6_Area12" begin="995.826s"
end="1032.5796s"/>
  </media>
  <media id="Contexto6_Slide9" src="media/Slide9.JPG"
descriptor="dSlides"/>
  <media id="Contexto6_Slide10" src="media/Slide10.JPG"
descriptor="dSlides"/>
  <media id="Contexto6_Slide11" src="media/Slide11.JPG"
descriptor="dSlides"/>
  <media id="Contexto6_Slide12" src="media/Slide12.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto6_refer"
interface="Contexto6_Area9" role="onBegin"/>
    <bind component="Contexto6_Slide9" role="start"/>

```

```

</link>
<link xconnector="connectors#onBegin1StopNStartN">
  <bind component="Contexto6_refer">
interface="Contexto6_Area10" role="onBegin"/>
  <bind component="Contexto6_Slide9" role="stop"/>
  <bind component="Contexto6_Slide10" role="start"/>
</link>
<link xconnector="connectors#onBegin1StopNStartN">
  <bind component="Contexto6_refer">
interface="Contexto6_Area11" role="onBegin"/>
  <bind component="Contexto6_Slide10" role="stop"/>
  <bind component="Contexto6_Slide11" role="start"/>
</link>
<link xconnector="connectors#onBegin1StopNStartN">
  <bind component="Contexto6_refer">
interface="Contexto6_Area12" role="onBegin"/>
  <bind component="Contexto6_Slide11" role="stop"/>
  <bind component="Contexto6_Slide12" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopN">
  <bind component="Contexto6_refer">
interface="Contexto6_Area12" role="onEnd"/>
  <bind component="Contexto6_Slide12" role="stop"/>
</link>
</context>

<context id="Contexto7">
  <media id="Contexto7_refer" refer="mCam1" newInstance="false">
    <area id="Contexto7_Area13" begin="1032.5796s"
end="1219.218s"/>
  </media>
  <media id="Contexto7_Slide13" src="media/Slide13.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto7_refer">
interface="Contexto7_Area13" role="onBegin"/>
    <bind component="Contexto7_Slide13" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">
    <bind component="Contexto7_refer">
interface="Contexto7_Area13" role="onEnd"/>
    <bind component="Contexto7_Slide13" role="stop"/>
  </link>
</context>

<context id="Contexto8">
  <media id="Contexto8_refer" refer="mCam1" newInstance="false">
    <area id="Contexto8_Area14" begin="1219.218s"
end="1283.1s"/>
  </media>
  <media id="Contexto8_Slide14" src="media/Slide14.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto8_refer">
interface="Contexto8_Area14" role="onBegin"/>
    <bind component="Contexto8_Slide14" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">

```

```

    <bind component="Contexto8_refer"
interface="Contexto8_Area14" role="onEnd"/>
    <bind component="Contexto8_Slide14" role="stop"/>
  </link>
</context>

<context id="Contexto9">
  <media id="Contexto9_refer" refer="mCam1" newInstance="false">
    <area id="Contexto9_Area15" begin="1283.1s"
end="1319.8068s"/>
    <area id="Contexto9_Area16" begin="1319.8068s"
end="1328.5272s"/>
    <area id="Contexto9_Area17" begin="1328.5272s"
end="1494.7764s"/>
    <area id="Contexto9_Area18" begin="1494.7764s"
end="2366.4888s"/>
  </media>
  <media id="Contexto9_Slide15" src="media/Slide15.JPG"
descriptor="dSlides"/>
  <media id="Contexto9_Slide16" src="media/Slide16.JPG"
descriptor="dSlides"/>
  <media id="Contexto9_Slide17" src="media/Slide17.JPG"
descriptor="dSlides"/>
  <media id="Contexto9_Slide18" src="media/Slide18.JPG"
descriptor="dSlides"/>

  <link xconnector="connectors#onBegin1StartN">
    <bind component="Contexto9_refer"
interface="Contexto9_Area15" role="onBegin"/>
    <bind component="Contexto9_Slide15" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto9_refer"
interface="Contexto9_Area16" role="onBegin"/>
    <bind component="Contexto9_Slide15" role="stop"/>
    <bind component="Contexto9_Slide16" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto9_refer"
interface="Contexto9_Area17" role="onBegin"/>
    <bind component="Contexto9_Slide16" role="stop"/>
    <bind component="Contexto9_Slide17" role="start"/>
  </link>
  <link xconnector="connectors#onBegin1StopNStartN">
    <bind component="Contexto9_refer"
interface="Contexto9_Area18" role="onBegin"/>
    <bind component="Contexto9_Slide17" role="stop"/>
    <bind component="Contexto9_Slide18" role="start"/>
  </link>
  <link xconnector="connectors#onEnd1StopN">
    <bind component="Contexto9_refer"
interface="Contexto9_Area18" role="onEnd"/>
    <bind component="Contexto9_Slide18" role="stop"/>
  </link>
</context>

<context id="Contexto10">
  <media id="Contexto10_refer" refer="mCam1" newInstance="false">
    <area id="Contexto10_Area19" begin="2366.4888s"
end="3352.7832s"/>
  </media>

```

```
<media id="Contexto10_Slide19" src="media/Slide19.JPG"
descriptor="dSlides"/>

<link xconnector="connectors#onBegin1StartN">
  <bind component="Contexto10_refer"
interface="Contexto10_Area19" role="onBegin"/>
  <bind component="Contexto10_Slide19" role="start"/>
</link>
<link xconnector="connectors#onEnd1StopN">
  <bind component="Contexto10_refer"
interface="Contexto10_Area19" role="onEnd"/>
  <bind component="Contexto10_Slide19" role="stop"/>
</link>
</context>

</body>

</ncl>
```