Innovational Research Incentives Scheme
Grant application form 2008
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Registration form (basic details)

1a. Details of applicant
-Name, title(s):   Dr. Jacco Ronald van Ossenbruggen
-Male/female: male
-Address for correspondence:

    J.R. van Ossenbruggen
    p.a. CWI
    Kruislaan 413
    P.O. Box 94079
    1090 GB AMSTERDAM

-Preference for correspondence in English: no
-Telephone: (+31) 20 592 4141
-Fax: (+31) 20 592 4312
-E-mail: Jacco.van.Ossenbruggen@cwi.nl
-Website: http://www.cwi.nl/~jrvosse/

-Doctorate: 10/04/01
-Use of extension clause (see Notes): no

1b. Title of research proposal
Tagging = Linking: Descriptive annotations by expert and lay user communities

1c. Summary of research proposal
Web users frequently search, organize, visualize and otherwise interact with visual media assets. These processes are facilitated by having descriptive annotations associated with the assets. In many domains, experts routinely provide carefully curated, to the point and factually correct annotations. They tend, however, to be expensive to construct and are often based on terminology inaccessible to the general public. Lay users are able to annotate far larger numbers of assets through "tagging".

Tags tend to be free-form textual descriptions, often with a personal bias, which provide a familiar means for lay users to search for assets. The downside is, however, that tags that are highly functional in a personal context, may work less well in other contexts. The research challenge is to effectively combine the advantages of expert and lay user annotation to create large numbers of highly descriptive annotations.

The effect of a new annotation on a) the *findability* of an asset and b) the *communication* of information about the asset should be quantified. Metrics are developed to measure descriptive values along these dimensions, with respect to a given set of annotated assets. The description metrics are used to develop a domain-specific model that, for each asset, predicts the annotation type with the highest added value along the dimensions involved.

The model forms the basis for an annotation interface that combines the ease of use and incentives deployed in tagging platforms with innovative interface elements to guide users to the most descriptive annotation types. In addition, we extend the model and interfaces to support open annotation of visual media items in the form of links to existing material on the Web.

KEYWORDS: Annotation, usability, visual media, web-based access.

1d. NWO Council area: EW

1e. Host institution: CWI

Innovational Research Incentives Scheme
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Research proposal

2. Description of the proposed research
The research proposal is enclosed as a separate document (word count: 3500).

Cost estimates

3a. Budget

	200y	200y+1	200y+2	200y+3	200y+4	TOTAL
Staff costs: (in k€)						
Applicant	52,6	53,8	55,1	56,8	57,7	276,0
PhD student	31,1	36,2	37,9	39,8	0,0	145,1
PhD student	31,1	36,2	37,9	39,8	0,0	145,1
Support staff						
Non-staff costs: (k€)						
Equipment	4,0	0	0	0	0	4,0
Consumables						
Travel and subsistence	6,5	6,5	6,5	6,5	3,0	29,0
Other						
TOTAL	125,2	132,8	137,5	142,9	60,6	599,1

3b. Indicate the time (percentage of fte) you will spend on the research: 0.60 fte

3c. Intended starting date: 1-1-2009

3d. Have you requested any additional grants for this project either from NWO or from any other institution? No

Innovational Research Incentives Scheme
Grant application form 2008
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Curriculum vitae

4a. Personal details
Title(s), initial(s), first name, surname: Dr. Jacco Ronald van Ossenbruggen
Male/female: male
Date and place of birth: 13 april 1970, Hoorn
Nationality: Dutch
Birth country of parents: The Netherlands

4b. Master's ('Doctoraal')
University/College of Higher Education: Vrije Universiteit Amsterdam
Date (dd/mm/yy): 24/08/94
Main subject: Computer science

4c. Doctorate
University/College of Higher Education: Vrije Universiteit Amsterdam
Date (dd/mm/yy): 10/04/01
Supervisor ('Promotor'): Hans van Vliet
Title of thesis: Processing Structured Hypermedia — A Matter of Style

4d. Work experience since graduating
(per appointment: fte, tenured term ('vast') / fixed-term ('tijdelijk') and supervisory re-
sponsibilities if any)
01/09/98 - 31/07/01: Post doc, CWI/INS, fixed term, 1.0 fte.
01/08/01 - Present: Researcher, CWI/INS, tenured, 1.0 fte.
01/06/02 - Present: PhD supervision of Joost Geurts (expected graduation 2008)
01/10/05 - Present: PhD supervision of Alia Amin (expected graduation 2009)
01/11/05 - Present: PhD supervision of Michiel Hildebrand (expected graduation 2009)
01/08/04 - 31/07/08: Program manager of the BRICKS BSIK project, fixed term 0.4 fte.

4e. Person-years of research
7 years after completing PhD thesis.

4f. Brief summary of research over last five years
(maximum 350 words)
Van Ossenbruggen's research centers on the question of how the intended meaning of
digital hypermedia assets can be conveyed to users as effectively as possible.
With his background in document engineering, he has researched to what extent the
principles that are used in this field for better automatic processing and presenting text
documents (e.g. the principle of separation of content and style) can also be used to
automatically process and present multimedia assets in a coherent, Web-based presenta-
tion. The search for interoperability and reusability of media assets and their descriptions
has been a recurring theme.
Since 2004, his research has focused on interoperability and effective user interface de-
sign for accessing large heterogeneous annotated media collections in the domain of cul-
tural heritage. In the context of the national MultimediaN project, fruitful collaborations
with key players in the Dutch cultural heritage field have been established (examples
include umbrella organizations such as DEN, ICN and RKD and several of the larger col-
lection owners such as Rijksmuseum Amsterdam, Rijksmuseum voor Volkenkunde in Lei-
den, Tropenmuseum Amsterdam and the Royal Dutch Library).
He has been actively involved in international knowledge transfer activities by dissemi-
nating the results of his academic work via various W3C publications.

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4g. International activities

Van Ossenbruggen was a member of the World Wide Web Consortium's Working Group on Synchronized Multimedia (http://www.w3.org/AudioVideo/) from September 1997 until December 2001. The working group, with around 20 academic and industrial members from the US, Japan and Europe was responsible for developing the W3C Recommendations on the SMIL 1.0 and SMIL 2.0 mark-up languages.

Van Ossenbruggen was a member of the W3C Semantic Web Best Practices and Deployment Working Group from 2004 until 2006. From 2005, he co-founded and chaired the working group's multimedia task force with G. Stamou (Athens) and Jeff Pan (Manchester). In April 2006, Van Ossenbruggen co-founded the W3C Incubator Group on Multimedia Semantics (http://www.w3.org/2005/Incubator/mmsem/).

4h. Other academic activities

Van Ossenbruggen organized and participated in multiple conference workshops and panels in the international WWW conference series. In November 2007, he co-organized the First International Workshop on Cultural Heritage on the Semantic Web in conjunction with the 6th International Semantic Web Conference in Busan, Korea. The topic of this workshop is directly relevant to the research proposed in this application.

4i. Scholarships and prizes

From 2004, the applicant leads the E-Culture research team of the Dutch BSIK MultimediaN project. The team won the first prize of the Semantic Web Challenge during the International Semantic Web Conference 2006, in Athens (GA), USA. (http://e-culture.multimedian.nl/news/iswc2006-press-release.html)

List of publications

5. Publications:

- Key publications (repeated in lists below)

S **Jacco van Ossenbruggen**, Frank Nack and Lynda Hardman. That Obscure Object of Desire: Multimedia Metadata on the Web (Part I)) IEEE MultiMedia (volume 11, number 4, pages 38-48), October - December 2004

S Frank Nack, **Jacco van Ossenbruggen** and Lynda Hardman. That Obscure Object of Desire: Multimedia Metadata on the Web (Part II). IEEE MultiMedia (volume 12, number 1, pages 54-63), January - March 2005

S Michiel Hildebrand, **Jacco van Ossenbruggen** and Lynda Hardman. /facet: A Browser for Heterogeneous Semantic Web Repositories. *In:* The Semantic Web - ISWC 2006 (pages 272-285), November 2006

S **Jacco van Ossenbruggen**, Alia Amin, Lynda Hardman, Michiel Hildebrand, Mark van Assem, Borys Omelayenko, Guus Schreiber, Anna Tordai, Victor de Boer, Bob Wielinga, Jan Wielemaker, Marco de Niet, Jos Taekema, Marie-France van Orsouw and Annemiek Teesing. Searching and Annotating Virtual Heritage Collections with Semantic-Web Techniques. *In:* Museums and the Web 2007, April 11-14, 2007

• **Jacco van Ossenbruggen**, Joost Geurts, Lynda Hardman and Lloyd Rutledge. Towards a Formatting Vocabulary for Time-based Hypermedia. *In:* The Twelfth International World Wide Web Conference (WWW2003) (pages 384-393), ACM Press, Budapest, Hungary, May 20-24, 2003

S **Jacco van Ossenbruggen**, Joost Geurts, Frank Cornelissen, Lloyd Rutledge and Lynda Hardman. Towards Second and Third Generation Web-Based Multimedia. *In:* The Tenth International World Wide Web Conference (pages 479-488), ACM Press, Hong Kong, May 1-5, 2001

- International (refereed) journals

S Giorgos Stamou, **Jacco van Ossenbruggen**, Jeff Z. Pan and Guus Schreiber. Multimedia Annotations on the Semantic Web. IEEE MultiMedia (volume 13, number 1, pages 86-90), January-March 2006

• **Jacco van Ossenbruggen**, Lynda Hardman and Lloyd Rutledge. Combining RDF Semantics with XML Document

Innovational Research Incentives Scheme
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Transformations. International Journal of Web Engineering and Technology (IJWET) (volume 2, number 2/3, pages 248-263), December 2005. IJWET Special Issue on Semantic Web Technologies for Data Integration and Multimedia Presentation. Flavius Frasincar, Geert-Jan Houben and **Jacco van Ossenbruggen** (guest editors).

S Frank Nack, **Jacco van Ossenbruggen** and Lynda Hardman. That Obscure Object of Desire: Multimedia Metadata on the Web (Part II). IEEE MultiMedia (volume 12, number 1, pages 54-63), January - March 2005

S **Jacco van Ossenbruggen**, Frank Nack and Lynda Hardman. That Obscure Object of Desire: Multimedia Metadata on the Web (Part I)) IEEE MultiMedia (volume 11, number 4, pages 38-48), October - December 2004

• **Jacco van Ossenbruggen**, Lynda Hardman and Lloyd Rutledge. Hypermedia and the Semantic Web: A Research Agenda. Journal of Digital Information (volume 3, number 1), August 2002

• Lynda Hardman, Patrick Schmitz, **Jacco van Ossenbruggen**, Warner R.T. ten Kate and Lloyd Rutledge. The Link vs. the Event: Activating and Deactivating Elements in Time-Based Hypermedia. New Review of Hypermedia and Multimedia (volume 6, pages 89-109), 2000

• Lynda Hardman, **Jacco van Ossenbruggen**, Lloyd Rutledge and Dick C.A. Bulterman. Hypermedia: The Link with Time. ACM Computing Surveys, December 1999

- International (refereed) conference proceedings

S **Jacco van Ossenbruggen**, Alia Amin, Lynda Hardman, Michiel Hildebrand, Mark van Assem, Borys Omelayenko, Guus Schreiber, Anna Tordai, Victor de Boer, Bob Wielinga, Jan Wielemaker, Marco de Niet, Jos Taekema, Marie-France van Orsouw and Annemiek Teesing. Searching and Annotating Virtual Heritage Collections with Semantic-Web Techniques. *In:* Museums and the Web 2007, April 11-14, 2007

• Zeljko Obrenovic and **Jacco van Ossenbruggen**. Web browser accessibility using open source software. *In:* Proceedings of the 2007 international cross-disciplinary conference on Web accessibility (W4A), ACM International Conference Proceeding Series, Vol. 225 (pages 15-24), May, 7-8, 2007, Banff, Canada

S Michiel Hildebrand, **Jacco van Ossenbruggen** and Lynda Hardman. /facet: A Browser for Heterogeneous Semantic Web Repositories. *In:* The Semantic Web - ISWC 2006 (pages 272-285), November 2006

S Guus Schreiber, Alia Amin, Mark van Assem, Viktor de Boer, Lynda Hardman, Michiel Hildebrand, Laura Hollink, Zhisheng Huang, Janneke van Kersen, Marco de Niet, Borys Omelayenjko, **Jacco van Ossenbruggen**, Ronny Siebes, Jos Taekema, Jan Wielemaker and Bob Wielinga. MultimediaN E-Culture Demonstrator. *In:* The Semantic Web - ISWC 2006 (pages 951-958), November 2006

S Lynda Hardman and **Jacco van Ossenbruggen**. Creating Meaningful Multimedia Presentations. *In:* IEEE International Symposium on Circuits and Systems, May 2006. Special session on Advances in semantic multimedia analysis for personalised content access

• Lloyd Rutledge, **Jacco van Ossenbruggen** and Lynda Hardman. Making RDF Presentable -- Integrated Global and Local Semantic Web Browsing. *In:* The Fourteenth International World Wide Web Conference (pages 199-206), ACM Press, Chiba, Japan, May 2005

• Kateryna Falkovych, Frank Nack, **Jacco van Ossenbruggen** and Lloyd Rutledge. SampLe: Towards a Framework for System-supported Multimedia Authoring. *In:* Proceedings of the 10th International Multi-Media Modelling Conference 2004 (pages 362), January 5-7, 2004, Brisbane, Australia,

S Joost Geurts, Stefano Bocconi, **Jacco van Ossenbruggen** and Lynda Hardman. Towards Ontology-driven Discourse: From Semantic Graphs to Multimedia Presentations. *In:* Second International Semantic Web Conference (ISWC2003) (Edited by Dieter Fensel, Katia Sycara and John Mylopoulos) (pages 597-612), Springer-Verlag, Sanibel Island, Florida, USA, October 20-23, 2003

• **Jacco van Ossenbruggen**, Joost Geurts, Lynda Hardman and Lloyd Rutledge. Towards a Formatting Vocabulary for Time-based Hypermedia. *In:* The Twelfth International World Wide Web Conference (WWW2003) (pages 384-393), ACM Press, Budapest, Hungary, May 20-24, 2003

• Joost Geurts, **Jacco van Ossenbruggen** and Lynda Hardman. Application-Specific Constraints for Multimedia Presentation Generation. *In:* Proceedings of the International Conference on Multimedia Modeling 2001 (MMM01) (pages 247-266), November 5-7, 2001, Amsterdam, The Netherlands

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• Lloyd Rutledge, Brian Bailey, **Jacco van Ossenbruggen**, Lynda Hardman and Joost Geurts. Generating Presentation

Innovational Research Incentives Scheme
Grant application form 2008
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Constraints from Rhetorical Structure. *In:* Proceedings of the 11th ACM Conference on Hypertext and Hypermedia (pages 19-28), May 30 -- June 3, 2000, San Antonio, Texas, USA

- Lloyd Rutledge, Lynda Hardman and **Jacco van Ossenbruggen**. The Use of SMIL: Multimedia Research Currently Applied on a Global Scale. *In:* Proceedings of Multimedia Modeling 99 (MMM 99) (pages 1-17), World Scientific, Ottawa, Canada, October 4-6, 1999

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. Anticipating SMIL 2.0: The Developing Cooperative Infrastructure for Multimedia on the Web. *In:* Proceedings of The Eighth International World Wide Web Conference (WWW8), May 1999

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. Mix'n'Match: Exchangeable Modules of Hypermedia Style. *In:* Proceedings of the 10th ACM Conference on Hypertext and Hypermedia (pages 179-188), February 21-25, 1999, Darmstadt, Germany

- Lynda Hardman, **Jacco van Ossenbruggen**, Lloyd Rutledge, K. Sjoerd Mullender and Dick C.A. Bulterman. Do You Have the Time? Composition and Linking in Time-based Hypermedia (DOI). *In:* Proceedings of the 10th ACM Conference on Hypertext and Hypermedia (pages 189-196), February 21-25, 1999, Darmstadt, Germany

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- Lloyd Rutledge, Lynda Hardman, **Jacco van Ossenbruggen** and Dick C.A. Bulterman. Adaptable Hypermedia with Web Standards and Tools. *In:* The Active Web -- A British HCI Group Day Conference, January 20, 1999, London

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. Structural Distinctions Between Hypermedia Storage and Presentation. *In:* Proceedings of ACM Multimedia (pages 145-150), ACM Press, November 1998

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- **Jacco van Ossenbruggen**, Anton Eliëns, Lloyd Rutledge and Lynda Hardman. Requirements for Multimedia Markup and Style Sheets on the World Wide Web. *In:* The Seventh International World Wide Web Conference (WWW7) (volume 30, pages 694-696), Computer Networks and ISDN Systems, Elsevier Science B.V., April 1998

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. A Framework for Generating Adaptable Hypermedia Documents. *In:* Proceedings of ACM Multimedia (pages 121-130), ACM Press, Seattle, Washington, November 1997

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. Cooperative use of MHEG and HyTime in Hypermedia Environments. *In:* Actes de la 4e conférence internationale Hypertextes et Hypermédias - réalisations, outils & méthodes (Edited by Jean-Pierre Balbe, Alain Lelu, Marc Nanard and Imad Saleh) (number (1)2-3-4, pages 57-73), Hypertextes et Hypermédias, Editions HERMES, Paris, September 1997

- Anton Eliëns, Martijn van Welie, **Jacco van Ossenbruggen** and Bastiaan Schönhage. Jamming (on) the Web. *In:* Proceedings of the 6th International World Wide Web Conference - Everone, Everything Connected (pages 419--426), O'Reilly and Associates, Inc., Santa Clara, California USA, April 7-11, 1997

- Lloyd Rutledge, **Jacco van Ossenbruggen**, Lynda Hardman and Dick C.A. Bulterman. Generic Hypermedia Structure and Presentation Specification. *In:* ICCC/IFIP Conference - Electronic Publishing '97, April 1997

- **Jacco van Ossenbruggen**, Lynda Hardman, Lloyd Rutledge and Anton Eliëns. Style Sheet Support for Hypermedia Documents. *In:* The Proceedings of the Eighth ACM Conference on Hypertext and Hypermedia (pages 216-217), ACM Press, Southampton, UK, April 1997

- Anton Eliëns, Frank Niessink, Bastiaan Schönhage, **Jacco van Ossenbruggen** and Paul Nash. Support for Business Process Redesign - Simulation, Hypermedia and the Web. *In:* Euromedia 96: Telematics in a Multimedia Environment, December 19-21, London. United Kingdom (pages 193--200), December 1996

- Anton Eliëns, **Jacco van Ossenbruggen** and Bastiaan Schönhage. Animating the Web - An SGML-based Approach. *In:* Proceedings of the International Conference on 3D and Multimedia on the Internet, WWW and Networks, 17-18 April 1996, Bradford. (Edited by Rae Earnshaw and John Vince) (pages 75--96), British Computer Society, April 1996

- **Jacco van Ossenbruggen**, Anton Eliëns and Bastiaan Schönhage. Web Applications and SGML. *In:* Proceedings of the Sixth International Conference on Electronic Publishing, Document Manipulation and Typography (Edited by David F. Brailsford and Richard K. Furuta) (volume 8(2 & 3) June and September 1995, pages 51--62), Electronic Publishing --- Origination, Dissemination and Design, John Wiley & Sons, Ltd., 1996

Innovational Research Incentives Scheme
Grant application form 2008
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- **Jacco van Ossenbruggen** and Anton Eliëns. Bringing Music to the Web. *In:* Proceedings of the Fourth International World Wide Web Conference - The Web Revolution (pages 309-314), O'Reilly and Associates, Inc., December 1995
- **Jacco van Ossenbruggen** and Anton Eliëns. Music in Time-based Hypermedia. *In:* Proceedings of the ACM European Conference on Hypermedia Technology (ECHT'94) (pages 224--270), ACM Press, September 18--23, 1994, Edinburgh, 1994

- Books, or contributions to books
- **Jacco van Ossenbruggen** and Lynda Hardman. From Syntactic Towards Semantic-driven Document Transformations. *In:* Creation, Use and Deployment of Digital Information (Edited by Herre van Oostendorp, Andrew Dillon and Leen Breure) (pages 55-72), Erlbaum, March 2005
- Anton Eliëns, **Jacco van Ossenbruggen** and Bastiaan Schönhage. Animating the Web - An SGML-based Approach. *In:* The Internet in 3D - Information, Images and Interaction (Edited by Rae Earnshaw and John Vince) (pages 75--96), 1997

- Other (workshop papers and technical reports not included)
S W3C. Image Annotation on the Semantic Web. Multimedia Semantics Incubator Group Report (XGR). August 14, 2007
- W3C. Synchronized Multimedia Integration Language (SMIL 2.0) Specification. W3C Recommendation. August 7, 2001
- W3C. Synchronized Multimedia Integration Language (SMIL) 1.0 Specification. W3C Recommendation. June 15, 1998
S Hildebrand, M., **van Ossenbruggen, J**., Amin, A., Aroyo, L., Wielemaker, J., and Hardman, L. (2007). The design space of a configurable autocompletion component. Technical Report INS-E0708, CWI. Submitted to the 17th International World Wide Web Conference — WWW2008.

Signature

I hereby declare that I have completed this form truthfully:

Name: Jacco van Ossenbruggen

Place: Ouderkerk a/d Amstel

Date: 08/01/2008

Please submit the application to NWO in electronic form (pdf format is required!) using the Iris system, which can be accessed via the NWO website (www.nwo.nl/vi).

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I, the undersigned declare that I have today posted (tick relevant documents):

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     (to be sent by post, optional for Vidi during the application procedure)

     Address list of 'non-referees'
     (to be sent by post before submission deadline, optional for all applicants, maximum 3 names, see Notes)

1st Vidi application

Name of applicant: Jacco van Ossenbruggen

Place: Ouderkerk a/d Amstel

Date: 06/01/2008

Postal address:
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p.a. CWI
Kruislaan 413
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NWO Council area: EW

Send the documents to:

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Council area: **(fill in the area of your choice!)**
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2509 AC The Hague
(The Netherlands)

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2593 CE The Hague