

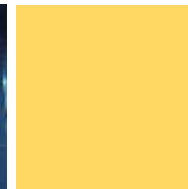
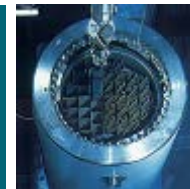
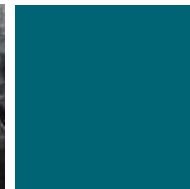
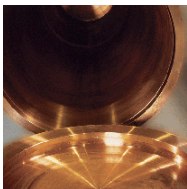
Proposal for the IGD-TP Knowledge Management Portal

IGD-TP EXCHANGE FORUM N°4
Prague Congress Centre
October 29-30, 2013

Posiva Oy
Juhani Palmu
Project Manager
Corporate Support, Information & Security Management
juhani.palmu@posiva.fi



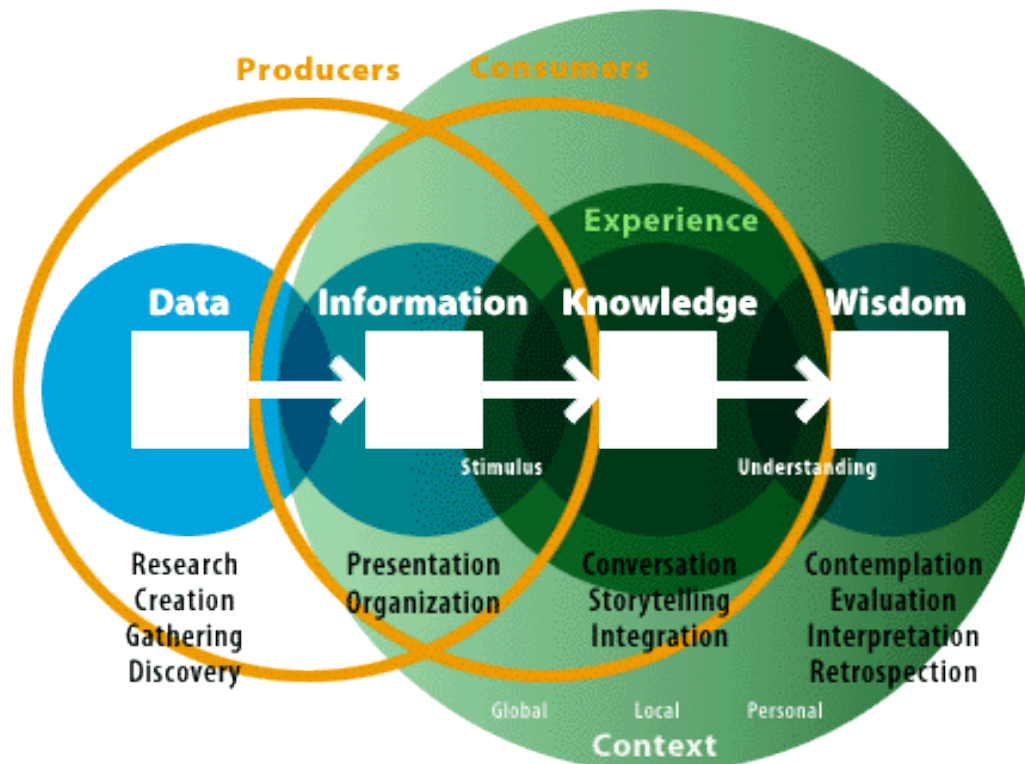
POSIVA



KNOWLEDGE MANAGEMENT

KM - Knowledge Management

- What is knowledge?



Source: <http://www.nathan.com>

KM - Knowledge Management

- What is knowledge?
- Knowledge Management is the discipline of enabling individuals, teams and entire organisations to collectively and systematically create, share and apply knowledge, to better achieve their objectives“.

Ron Young, CEO/CKO Knowledge Associates International

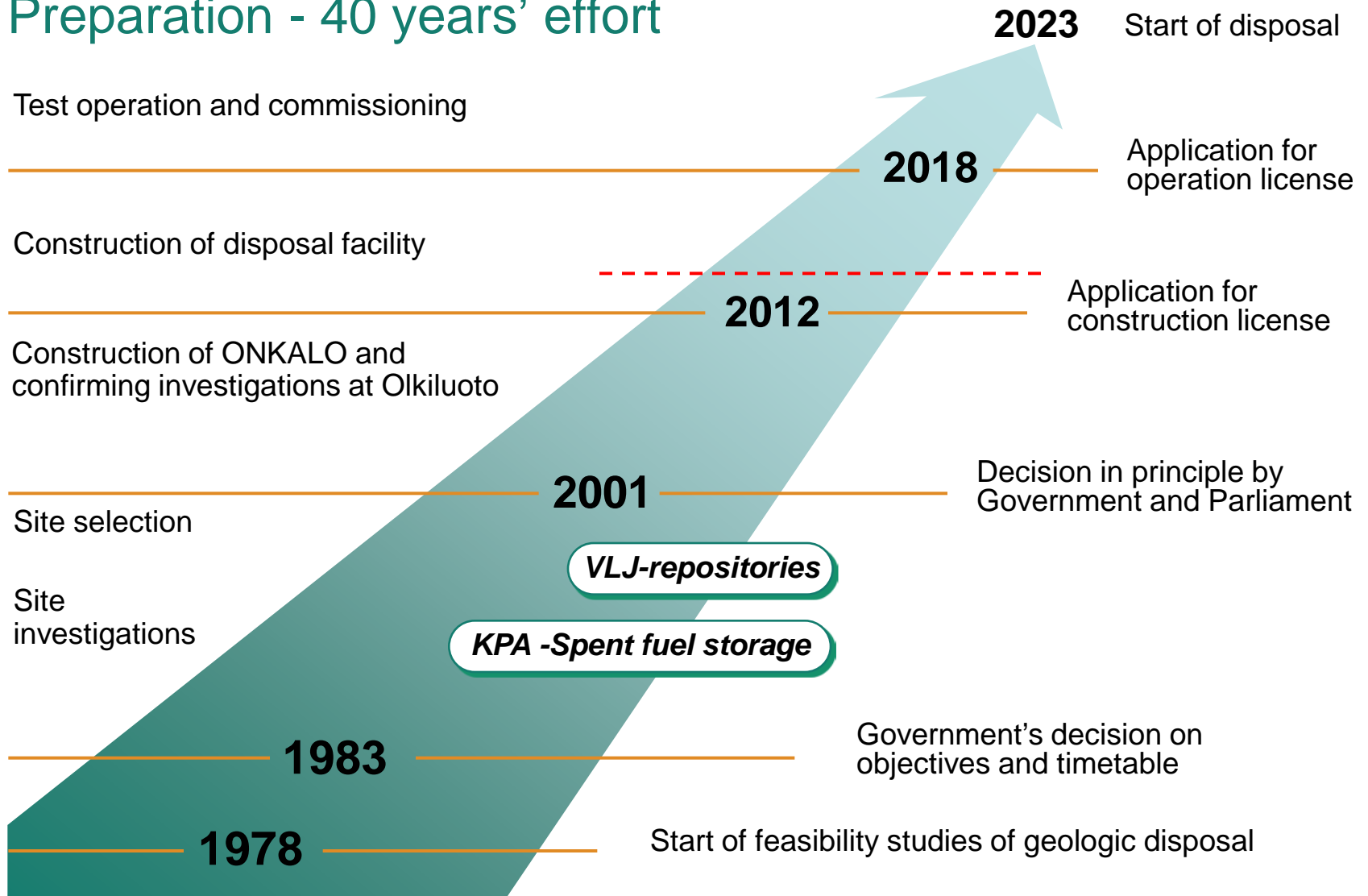
KNOWLEDGE MANAGEMENT SYSTEMS

POSIVA

Olkiluoto Island



Final Disposal of Spent Fuel in Finland Preparation - 40 years' effort



KMS - Knowledge Management System

- On the long term horizon one challenge in knowledge management within nuclear waste management is how to preserve the basic knowledge of the final disposal activities in next decades and at least the next century while employees and generations will change.
- The threat is that the final disposal activities will be interrupted if any doubt of absence for the long term safety analysis will arise or the fundamentals of the analysis will not be remembered or understood.

KMS - Knowledge Management System

- The ultimate challenge in knowledge management is to transfer the undocumented tacit information to be utilised for the organisation while personnel will leave organisation or will retire.

KMS - Knowledge Management System

- Solutions for the final disposal of spent nuclear produced in Finland have been under research since late 1970's.
- This work has been co-ordinated by Posiva since 1996 and by its' preceding organisations until then.

KMS - Knowledge Management System

- The extensive documentation in several formats covers this scientific and technical foundation for the concept of the geological disposal of high radioactive uranium waste to the Finnish bedrock.
- Due to the historical reasons of general development of documentation procedures during last decades, a major part of this documentation have been archived only in paper form and thus have not been accessible in digital ways.

KMS - Knowledge Management System

- The first step for the KMS in Posiva has been to organise the contents of the research work and reports to be utilised in digital form and in much more intuitively approached way by using new and more enhanced technologies compared to conventional documentation management systems.
- The implementation of the KMS was launched in web based KMS portal, which combines report based information from the internal document management system.

KMS - Knowledge Management System

- Paper reports since 1979 (ca 2400 pcs) have been scanned, optically character recognised and filed in pdf/A form. All of ca 3400 reports have been stored in current conventional documentation management system.

KMS - Knowledge Management System

- The implementation of the KMS has been launched in production in visualised web based KMS ontology portal, which is available for personnel in Posiva and also for the trusted external parties including consultants and the local authority.

Future Outlook of the Posiva KMS Portal

POSIVA KMS-PORTAL

Posiva

Käytä synonyymisanastoa

Haun kohteet

- Raporttikirjasto
- SKB raportit
- Internet
- Luvitusaineisto

Dokumentti tyypit

- PDF
- PPT
- DOC
- Other
- All

Clusters

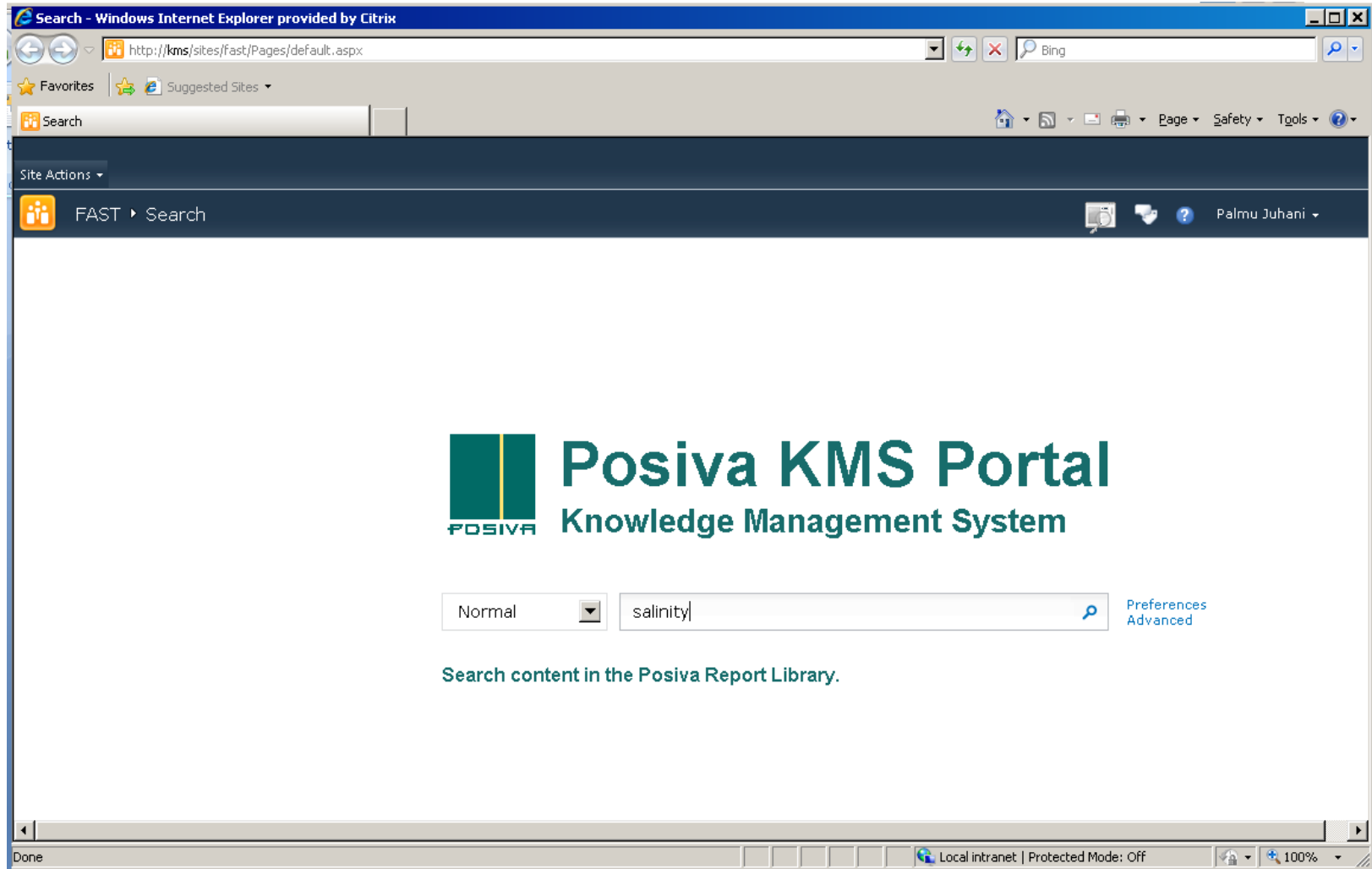
- All Results (145)
- Topics
 - Final Disposal (25)
 - Rock (24)
 - Groundwater (21)
 - Nuclear Power (19)
 - Modelling (18)
 - More...
- Authors
 - None (8)
 - Ahonen, L. [Geological Survey of Finland, Espoo (Finland)] (4)
 - Majapuro, J. [Suomen Malmi Oy, Espoo (Finland)] (4)
 - Ollila, K. [VTT Chemical Technology, Espoo (Finland)] (4)
 - Tarvainen, A.-M. [Suomen Malmi Oy, Espoo (Finland)] (4)
 - More...
- Publications
 - Other information: DN: The Report Series YJT Has Been Replaced By The Report Series PBD: 2003 (3)
 - Other information: DN: The Report Series YJT Has Been Replaced By The Report Series
- Dates

1. TERO Borehole Logging Device and Test Measurements of Rock Thermal ...
POSIVA OY FI-27160 OLKILUOTO, FINLAND Phone (02) 8372 31 (nat.), (+358-2-) 8372 31 (int.) Fax (02) 8372 3709 (nat.), (+358-2-) 8372 3709 (int.) TERO Borehole Logging Device and Test ...

2. Simulation of Hydraulic Disturbances Caused by the Decay Heat of the ...
POSIVA OY FI-27160 OLKILUOTO, FINLAND Phone (02) 8372 31 (nat.), (+358-2-) 8372 31 (int.) Fax (02) 8372 3709 (nat.), (+358-2-) 8372 3709 (int.) Simulation of Hydraulic Disturbances ...

3. Participation du SERLABLIRE au congrès ECORAD ...

Realised Outlook of the Posiva KMS Portal



Realised Outlook of the Posiva KMS Portal

The screenshot shows a web browser window displaying search results for the keyword 'salinity'. The browser is Windows Internet Explorer provided by Citrix. The search results are sorted by Relevance and show 1-10 of 498 results. The first result is titled 'Sisäinen, Julkaistu' and 'Groundwater Salinity at Olkiluoto and its Effects on a Spent Fuel Repository'. The second result is titled 'Sisäinen, Julkaistu' and 'Porewater Salinity and the Development of Swelling Pressure in Bentonite-based Buffer and Backfill Materials'. The search results are displayed in a grid format with thumbnail images of the documents. The browser address bar shows the URL: http://kms/sites/Fast/Pages/results.aspx?k=salinity&is=Normal. The search results page has a navigation bar with 'FAST' and 'Search Results' and a user profile for 'Palmu Juhani'. The search results are filtered by 'Normal' and 'salinity'. The search results are sorted by 'Relevance'. The search results are displayed in a grid format with thumbnail images of the documents. The search results are displayed in a grid format with thumbnail images of the documents. The search results are displayed in a grid format with thumbnail images of the documents.

Realised Outlook of the Posiva KMS Portal

The screenshot shows a web browser window displaying search results for 'salinity groundwater' on the Posiva KMS Portal. The browser is Internet Explorer, and the URL is <http://kms/sites/Fast/Pages/results.aspx?k=salinity%20groundwater&s=Normal>. The search results are displayed in a grid format, showing the first two results. The first result is titled 'Sisäinen, Julkaistu' and 'Groundwater Salinity at Olkiluoto and its Effects on a Spent Fuel Repository'. The second result is also titled 'Sisäinen, Julkaistu' and 'Groundwater Salinity at the Olkiluoto Site'. The search results are filtered by 'Normal' and sorted by 'Relevance'. The search results are displayed in a grid format, showing the first two results. The search results are displayed in a grid format, showing the first two results. The search results are displayed in a grid format, showing the first two results.

Search Results: salinity groundwater - Windows Internet Explorer provided by Citrix

http://kms/sites/Fast/Pages/results.aspx?k=salinity%20groundwater&s=Normal

Search Results: salinity groundwater

FAST Search Results

Normal salinity groundwater

1-10 of 466 results

Sort by: Relevance

Sisäinen, Julkaistu

[Groundwater Salinity at Olkiluoto and its Effects on a Spent Fuel Repository](#)

POSIVA-2000-11_QCR_A.pdf

... 2000-11 Groundwater salinity at Olkiluoto ... 6.2000 GROUNDWATER SALINITY AT ÖLKILUOTO ... glacial cycle groundwater salinity may increase ...

Authors: Timo Vieno

Keywords: groundwater; salinity; bentonite; performance; spent fuel; nuclear waste; disposal

Date: 5/4/2011

Open in Kronodoc, Open versions in Kronodoc

Sisäinen, Julkaistu

[Groundwater Salinity at the Olkiluoto Site](#)

POSIVA-2000-26_Working-report_QCR_A.pdf

... Työraportti 1536 Groundwater Salinity at the Olkiluoto ... posiva.fi Groundwater Salinity at the Olkiluoto ... Sipilä* Groundwater Salinity at the Olkiluoto ...

Authors: Paula Ruotsalainen; Henry Ahokas; Eero Heikkinen; Juhä Lindh; Jorma Nummela

Keywords: Saline ground water; electrical conductivity; Total Dissolved Solids; Olkiluoto; site characterisation

Date: 5/5/2011

Open in Kronodoc, Open versions in Kronodoc

Local intranet | Protected Mode: Off

Realised Outlook of the Posiva KMS Portal

The screenshot shows a web browser window displaying search results for "salinity groundwater copper canister". The page is titled "FAST - Search Results" and includes a search bar with the query "salinity groundwater copper canister". The results are sorted by "Relevance" and show 1-10 of 149 results. The first result is titled "Groundwater Salinity at Olkiluoto and its Effects on a Spent Fuel Repository" (POSIVA-2000-11 OCR_A.pdf) by Timo Vieno, dated 5/4/2011. The second result is "Site Scale Groundwater Flow in Håstholmen" (POSIVA-99-12 OCR_A.pdf) by Jari Löfman, also dated 5/4/2011. The page features a left-hand navigation menu with filters for File Type, Relevancy, Status, Author, Responsible, and Publish Year. A pagination bar at the bottom of the results shows page numbers 1 through 43, with page 39 highlighted.

Realised Outlook of the Posiva KMS Portal

The screenshot shows a search results page in a Windows Internet Explorer browser. The search query is "salinity groundwater copper canister sulfide". The results are sorted by Relevance and show 1-10 of 17 results. The first result is titled "Sisäinen, Julkaistu" and "Copper Corrosion Under Expected Conditions in a Deep Geologic Repository POSIVA-2002-01 OCR_A.pdf". The second result is titled "Sisäinen, Julkaistu" and "New Data on the Hyrkkölä U-Cu Mineralization: The Behaviour of Native Copper in a Natural Environment POSIVA-99-23 OCR_A.pdf". The page includes a sidebar with filters for File Type, Relevancy, Status, Author, Responsible, and Publish Year. The main content area displays the search results with a grid of document thumbnails and a "Pick" button.

Search Results : salinity groundwater copper canister sulfide - Windows Internet Explorer provided by Citrix

http://kms/sites/fast/Pages/results.aspx?k=salinity%20groundwater%20copper%20canister%20sulfide&s=Normal

FAST Search Results

Normal salinity groundwater copper canister sulfide Preferences Advanced

File Type 1-10 of 17 results Sort by: Relevance

Any File Type

Normal (17)

Relevancy

Any Relevancy

Sisäinen (17)

Status

Any Status

Julkaistu (17)

Author

Any Author

Lasse Ahonen (2)

Margit Snellman (2)

Ari Luukkonen;... (1)

Fraser King; L... (1)

show more v

Responsible

Any Responsible

Juhola Pii (1)

Kasa Seppo (1)

Publish Year

Any Publish Year

1999 (4)

1998 (2)

1984 (1)

1986 (1)

show more v

Sisäinen, Julkaistu

Copper Corrosion Under Expected Conditions in a Deep Geologic Repository POSIVA-2002-01 OCR_A.pdf

... A, 2001. **Groundwater** mixing and ... evaluation of **copper** corrosion ... Site scale **groundwater** flow in Olkiluoto ... dissolved **sulfide**. Corrosion ... behavior of **copper** alloys, stainless ... cold process **canister**. Harwell ...

Authors: Fraser King; Lasse Ahonen; Claes Taxen; Ulla Vuorinen; Lars Werme

Keywords: Copper; corrosion; nuclear waste; lifetime prediction; repository environment

Date: 5/4/2011

Open in Kronodoc, Open versions in Kronodoc

Sisäinen, Julkaistu

New Data on the Hyrkkölä U-Cu Mineralization: The Behaviour of Native Copper in a Natural Environment POSIVA-99-23 OCR_A.pdf

... the time of **sulfide**-calcite ... assemblage native **copper**-cuprite ... the present **groundwater** conditions ... behaviour of **copper** corrosion ... Although **groundwater** conditions ... contact with **copper sulfide** (sample).

Authors: Nuria Marcos; Lasse Ahonen

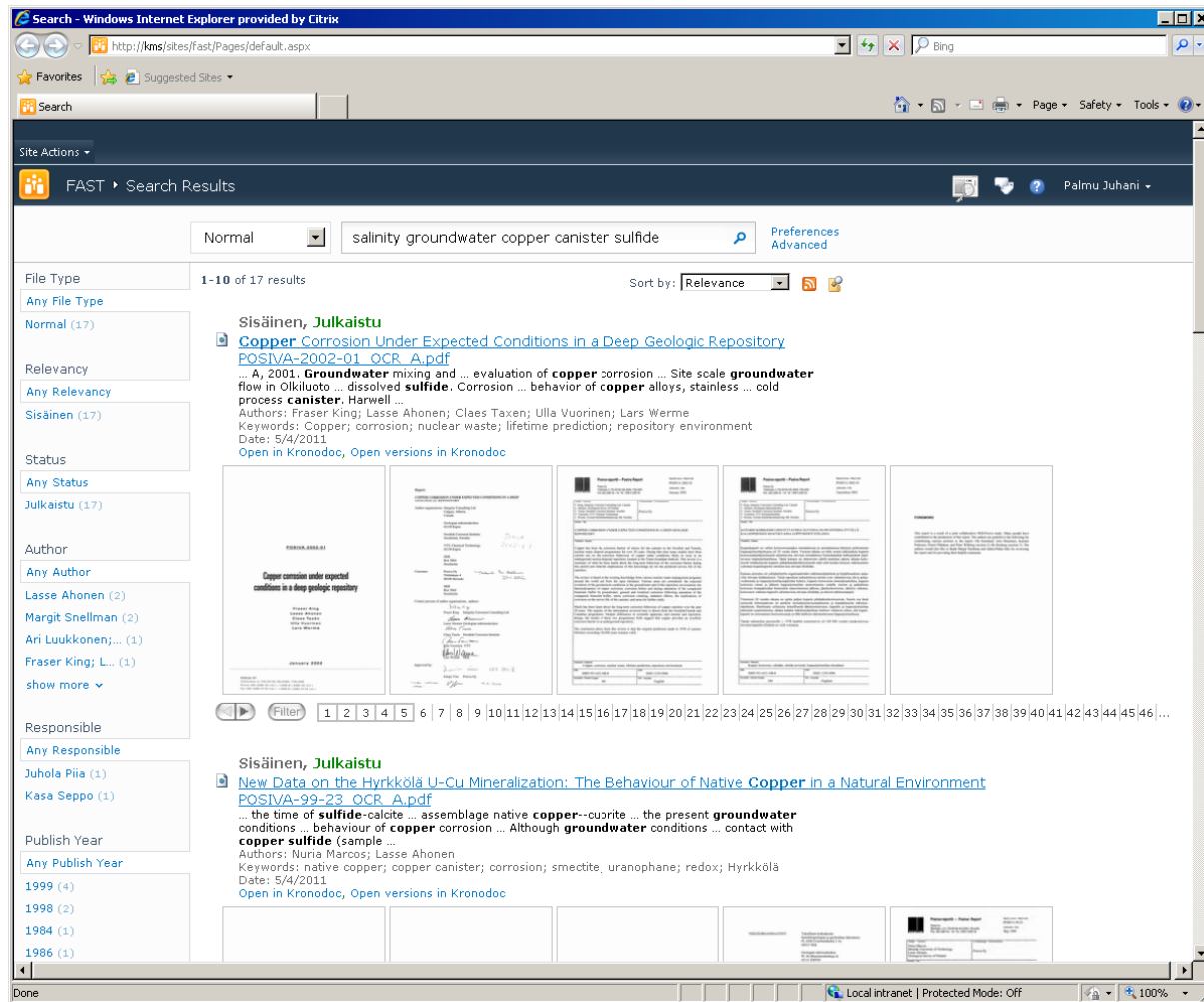
Keywords: native copper; copper canister; corrosion; smectite; uranophane; redox; Hyrkkölä

Date: 5/4/2011

Open in Kronodoc, Open versions in Kronodoc

Local intranet | Protected Mode: Off

Realised Outlook of the Posiva KMS Portal



Realised Outlook of the Posiva KMS Portal

Search Results : salinity groundwater copper canister sulfide - Windows Internet Explorer provided by Citrix

http://kms/sites/FAST/Pages/results.aspx?k=salinity%20groundwater%20copper%20canister%20sulfide&s=Normal

Search Results : salinity groundwater copper canister ...

Author

- Any Author
- Lasse Ahonen (2)
- Margit Snellman
- Ari Luukkonen;...
- Fraser King; L...
- show more ▾

Responsible

- Any Responsible
- Juhola Piia (1)
- Kasa Seppo (1)

Publish Year

- Any Publish Year
- 1999 (4)
- 1998 (2)
- 1984 (1)
- 1986 (1)
- show more ▾

Folders

- Any Folders
- Raportikirjasto (...
- Posiva-raportit... (...
- Posiva-työrapo... (...
- YJT-raportit (... (...

Modified Date

- Any Modified Date
- Earlier (17)

Language

- Any Language
- English (16)
- Finnish (1)

Company

- Any Company

POSIVA 2002-01

Copper corrosion under expected conditions in a deep geologic repository

**Fraser King
Lasse Ahonen
Claes Taxén
Ulla Vuorinen
Lars Werme**

January 2002

14/45/46 | ...

14/45/46 | ...

Done

Local intranet | Protected Mode: Off

100%

Realised Outlook of the Posiva KMS Portal

The screenshot shows a Windows Internet Explorer browser window displaying search results on the Posiva KMS Portal. The search criteria are 'salinity groundwater copper canister sulfide'. The results page is titled 'FAST' and shows 'Page 3 / 183'. The main search result is a report titled 'Posiva-raportti – Posiva Report' with report code 'POSIVA 2002-01' and date 'January 2002'. The report is by Posiva Oy, located at Töölönkatu 4, FIN-00100 HELSINKI, FINLAND, with phone number (09) 2280 30 and international number +358 9 2280 30. The report authors are F. King, L. Ahonen, C. Taxén, U. Vuorinen, and L. Werme. The report title is 'COPPER CORROSION UNDER EXPECTED CONDITIONS IN A DEEP GEOLOGIC REPOSITORY'. The abstract states: 'Copper has been the corrosion barrier of choice for the canister in the Swedish and Finnish, nuclear waste disposal programmes for over 20 years. During that time many studies have been carried out on the corrosion behaviour of copper under conditions likely to exist in an underground nuclear disposal repository located in the Fennoscandian bedrock. This review is a...'. Below the main result, there are several document thumbnails and a 'HIDE PICKS (8)' button. The browser's address bar shows the URL: http://kms/sites/fast/Pages/results.aspx?k=salinity%20groundwater%20copper%20canister%20sulfide&s=Normal. The browser's status bar at the bottom indicates 'Local intranet | Protected Mode: Off'.

Search Results : salinity groundwater copper canister sulfide - Windows Internet Explorer provided by Citrix

http://kms/sites/fast/Pages/results.aspx?k=salinity%20groundwater%20copper%20canister%20sulfide&s=Normal

Search Results : salinity groundwater copper canister ...

Site Actions

FAST Page 3 / 183

Posiva-raportti – Posiva Report

Raportin tunnus – Report code
POSIVA 2002-01

Julkaisuaika – Date
January 2002

Posiva Oy
Töölönkatu 4, FIN-00100 HELSINKI, FINLAND
Puh. (09) 2280 30 – Int. Tel. +358 9 2280 30

Tekijä(t) – Author(s) F. King, Integrity Corrosion Consulting Ltd, Canada L. Ahonen, Geological Survey of Finland C. Taxén, Swedish Corrosion Institute, Sweden U. Vuorinen, VTT Chemical Technology L. Werme, Svensk Kärnbränslehantering AB, Sweden	Toimeksiantaja(t) – Commissioned by Posiva Oy
--	--

Nimeke – Title
COPPER CORROSION UNDER EXPECTED CONDITIONS IN A DEEP GEOLOGIC REPOSITORY

Tiivistelmä – Abstract
Copper has been the corrosion barrier of choice for the canister in the Swedish and Finnish, nuclear waste disposal programmes for over 20 years. During that time many studies have been carried out on the corrosion behaviour of copper under conditions likely to exist in an underground nuclear disposal repository located in the Fennoscandian bedrock. This review is a...

HIDE PICKS (8)

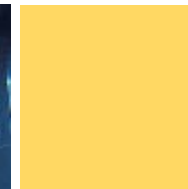
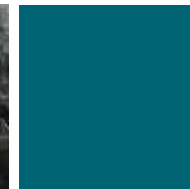
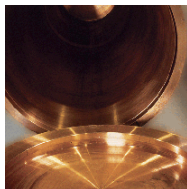
DOCUMENT NAME PDF Create document REMOVE ALL PICKS

Done Local intranet | Protected Mode: Off 100%

KMS - Knowledge Management System

- The activities for the KMS at Posiva started during 2011 and the Posiva KMS Portal is now completed and in production.

Improved Information Discovery for IGD-TP Organisation Members



POSIVA

IGD-TP Knowledge Management Search Portal

- Based on the development efforts done for the Posiva Final Disposal Knowledge Management Portal, Posiva representative will give a presentation and a demo how this technique could be utilised as form of the Common Knowledge Management Portal of IGD-TP.
- The demonstration stand will be open during all the Wednesday afternoon with Posiva and Documill representatives.

Documill Discovery Content Search

Fastest way to get to the information

SIMPLE

One integrated search to cover all places where you have critical information and content.

POWERFUL

Industry leading search engine searches public web sites, the intranet and wiki pages but also texts inside Microsoft PowerPoint™, Excel™, Word™ and PDF documents.

FAST

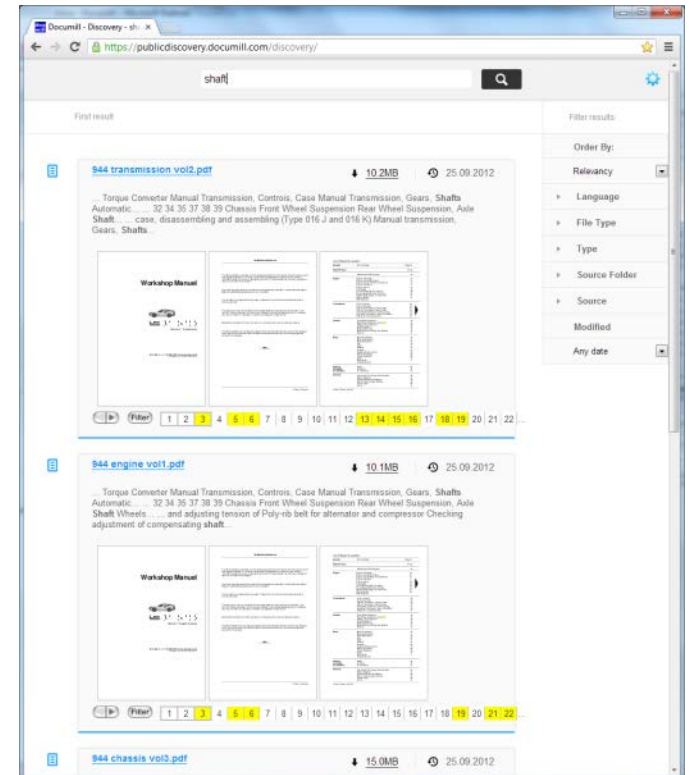
Search results show you the exact pages where the information is in all multi-page documents. You can view the documents in the browser without having jump between programs

Browser interface offers uniquely simple access to information equally from laptops, tablets or smartphones.



Optimized search results

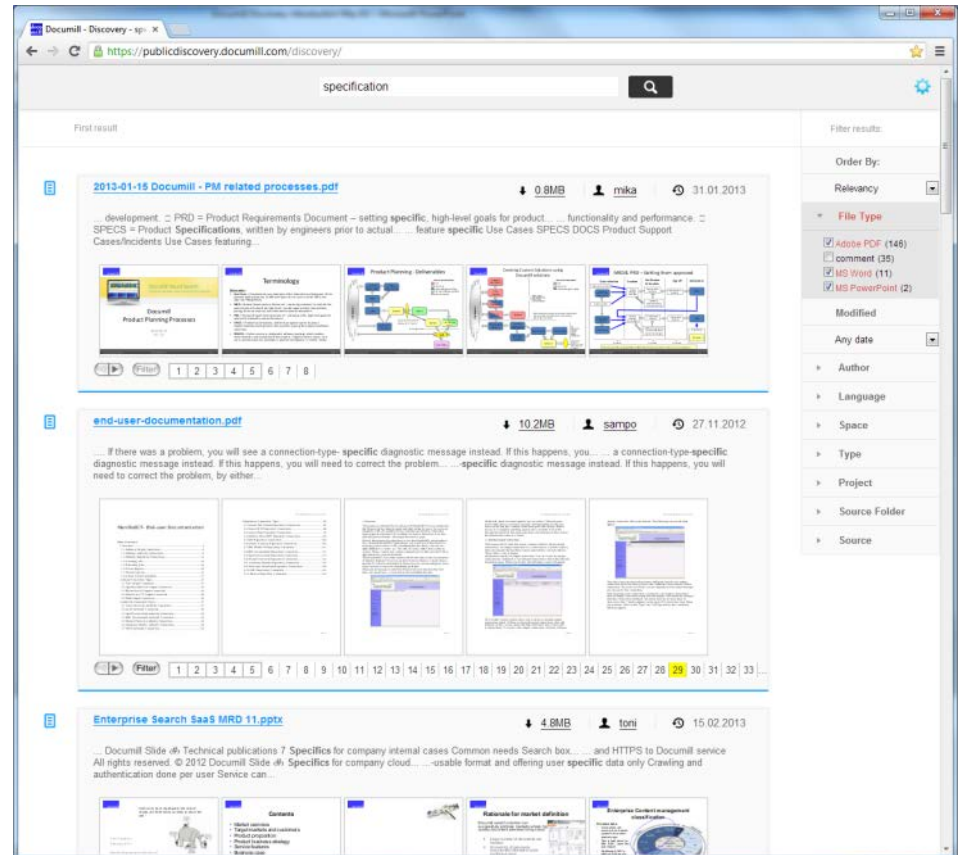
- Refine your search results by:
 - Stemming
 - Case independence or dependence
 - Compound word splitting
 - Synonym library
 - Search query spell checker
 - Priority of content language
 - Priority of content type e.g. title, discription, username etc.



Screen shots are used to illustrate functionality and they do not represent final look and feel

Integrated document previews

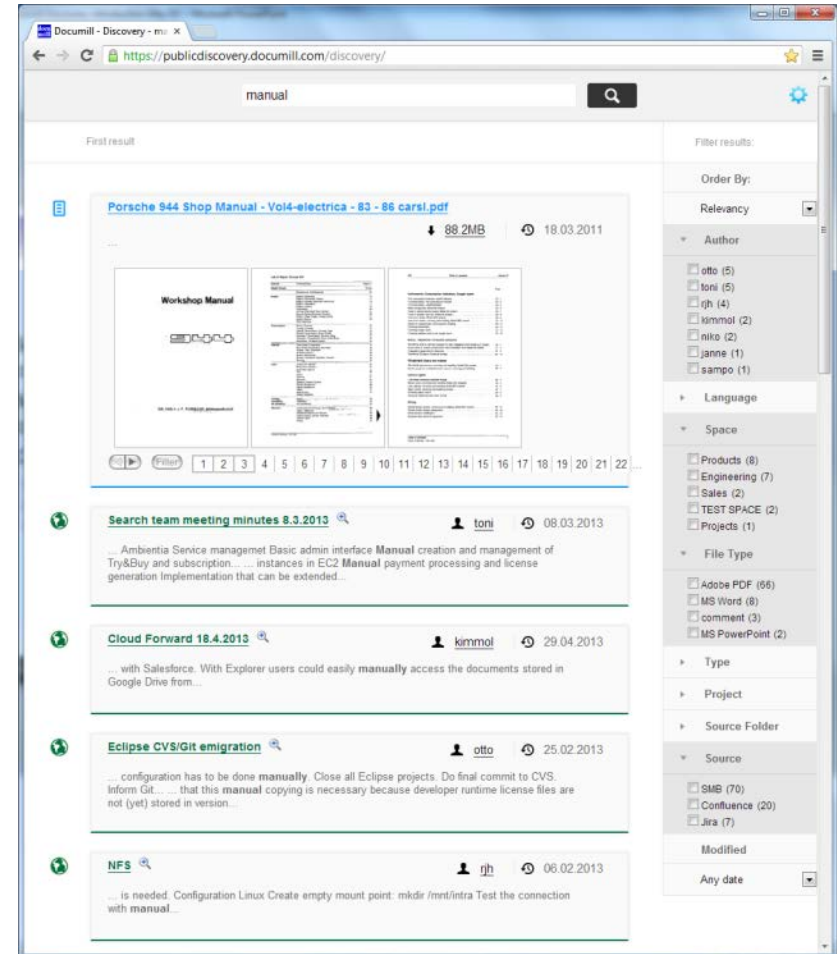
- Results show the exact pages where the information is in all main office document types
- Review documents in the browser without having to download them or jump between programs
- Fast and convenient way to offer mobile access to large documents.
 - Previews are technically pictures and will open on all major Internet browsers



Screen shots are used to illustrate functionality and they do not represent final look and feel

Powerful filters to narrow down results

- Filters are a fast way to narrow down results when user knows details about the searched item like author, file type or data system where it is stored
- Search index includes all content and metadata
- Filters are automatically created based on each result set
- Use case example:
Content type could be contract and it could be filtered or sorted by end date



Screen shots are used to illustrate functionality and they do not represent final look and feel

IGD-TP related content search

The screenshot shows a web browser window with the address bar displaying <https://nuclearwaste.documill.com/discovery/>. The search bar contains the text "copper canister" and shows 353 results. The first result is titled "Corrosion resistance of copper canister weld material" with a size of 0.7MB. Below the title is a brief description: "Corrosion resistance of copper canister weld material Technical Report TR-07-07 ISSN 1404-0344 CM Digitaltryck AB, Bromma, 2007 Corrosion resistance of copper canister weld material Rolf Gubner resistance of copper canister weld material Rolf Gubner, Urban Andersson Corrosion and Metals Research Institute March 2007 This report concerns a study". Below the description are five preview thumbnails: the first is the report cover, the second is a table of contents, the third is an executive summary, the fourth is a detailed table of contents, and the fifth is an introduction section. A navigation bar below the thumbnails shows page numbers 1 through 18, with page 4 selected. Below the navigation bar is the URL <http://www.skb.se/upload/publications/pdf/TR-07-07.pdf>. The second result is titled "Microsoft PowerPoint - 2011-11-28 MICROBIAL INVESTIGATIONS in the Prototype.pptx". Below the title is a brief description: "of aerobic microbes. These consume oxygen which in turn can be corrosive to a copper canister SRB MPN analysis – determines the number of sulphat reducing microbes. These produce sulphide which in turn can be corrosive to a copper canister 2 IRB MPN analysis – determines the number of iron-reducing microbes". Below the description are three preview thumbnails showing slides from the presentation.

Search result (353)

353 results "copper canister" 🔍

Filter results:

- ▶ Modified
- ▶ Order By
- ▶ Category
- ▶ File Type
- ▶ Language
- ▼ Organization
 - www.posiva.fi (171)
 - www.skb.se (127)
 - www.nwmo.ca (33)
 - www.nda.gov.uk (13)
 - www.andra.fr (7)
 - www.enresa.es (2)

Corrosion resistance of copper canister weld material ↓ 0.7MB

Corrosion resistance of copper canister weld material Technical Report TR-07-07 ISSN 1404-0344 CM Digitaltryck AB, Bromma, 2007 Corrosion resistance of copper canister weld material Rolf Gubner resistance of copper canister weld material Rolf Gubner, Urban Andersson Corrosion and Metals Research Institute March 2007 This report concerns a study

Show matches | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Web <http://www.skb.se/upload/publications/pdf/TR-07-07.pdf>

Microsoft PowerPoint - 2011-11-28 MICROBIAL INVESTIGATIONS in the Prototype.pptx

of aerobic microbes. These consume oxygen which in turn can be corrosive to a copper canister SRB MPN analysis – determines the number of sulphat reducing microbes. These produce sulphide which in turn can be corrosive to a copper canister 2 IRB MPN analysis – determines the number of iron-reducing microbes

For the demo purpose IGD public reports from members public web sites has been indexed and made searchable with Documill Discovery

Better and faster content discovery

The image shows a search engine interface with two search results. The first result is for "Stress corrosion cracking of copper canisters" with a URL <http://www.skb.se/upload/publications/pdf/TR-10-04.pdf>. The second result is for "Ecology and living conditions of groundwater fauna" with a URL <http://www.skb.se/upload/publications/pdf/TR-08-06.pdf>. A text box is overlaid on the first result with the text "Find and consume matching pages with highlights directly from browser". An arrow points from this text box to a second browser window. This second window shows a search for "copper canister" on the website <https://nuclearwaste.documill.com/discovery/>. The search results in this window are highlighted in yellow, showing sections like "1 Introduction" and "2 Experimental programme".

Find and consume matching pages with highlights directly from browser

1 Introduction

The report R-05-73 summarizes the development of Friction Stir Welding (FSW) at the Canister Laboratory under the period 2003 to middle of 2005. SKB 2005. The report describes the results from 49 welds with 5 cm thick copper performed in the laboratory. Several important technical advances have been made during that period. A large test programme (according to RIMAD-programme 2004, SKB 2004) has been performed in order to test the welding system and performance in respect to reliability, capacity, availability and the properties of the weld material. One open question was the corrosion resistance of the weld material, especially whether results from the FSW tool and formed copper oxides in the weld material might influence the corrosion properties negatively.

2 Experimental programme

A total of 9 samples produced from friction stir welding and one reference sample produced by electron beam welding type was used to perform comparative electrochemical corrosion measurements.

List of samples used (values in brackets describe the location in degrees along the weld):

- FSW 23.1 (13-15)
- FSW 23.2 (185-177)
- FSW 23.3 (177-159)
- FSW 23.14 (45-107)
- FSW 23.2 (167-189)
- FSW 23.3 (189-211)
- FSW 38.1 (5-27)
- FSW 38.2 (317-339)
- FSW 38.3 (339-1)
- EBW 060 (18-40)

2.1 Electrochemical measurements

Electrochemical measurements were performed with a Selenon 1286 Electrochemical Interface and a Radiometer Copenhagen POP200 Potentiostat/Galvanostat. The samples were degassed using ethanol and acetone, but otherwise used as received.

The test solutions were prepared from analytical grade chemicals in deionised water (reverse osmosis, conductivity 0.02 µS cm⁻¹).

Figure 2-1. Schematic drawing of samples cut 1 cm constant.

Proposal for IGD-TP members

- One universal content discovery tool for IGD-TP members publicly available content and reports.
- Documill Discovery crawls and indexes IGD-TP members web sites content and reports into the service.
- Crawling and indexing will be done with the member organisation permission.
- Crawling policies ensures that the index is always updated with when new content is added.
- Service access via user id and password.
- Service fee is 1500 €/year/member organisation.

IGD-TP Knowledge Management Search Portal

- Please visit the demonstration stand and see the prototype of the IGD-TP Knowledge Management Search Portal during the whole Wednesday afternoon.
- In case for further questions, please contact to

JUHANI PALMU

POSIVA OY

E-mail: <mailto:juhani.palmu@posiva.fi>

Web: <http://www.posiva.fi>

LinkedIn: <http://fi.linkedin.com/pub/juhani-palmu/24/b6/921>

TERHO LAAKSO

DOCUMILL OY

E-mail: <mailto:terho.laakso@documill.com>

Web: <http://www.documill.com>



POSITIVA