

THE KNOWLEDGE SHARING IN CEFME PORTAL

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Abstract:

The article presents the knowledge management system (KMS) and portal of CEFME (Central European Forum on Military Education) for military universities international cooperation, for their information and knowledge sharing. The portal is suggested not only for CEFME community members cooperation, but for cooperation with others relevant communities; for example LoD7 (working group established by the Secretariat of European Security and Defence College to control the international project "Exchanges of young officers, inspired by Erasmus") and iMAF (International Military Academic Forum). Authors of the paper are producers and administrators of the KMS and portal. First is the CEFME community described than is explained the KMS and its portal. The KMS in an ontology driven application based on software ATOM. The portal is a tool for support of community members. The sharing information and knowledge is about universities, their parts and members; about education, research and social area; about activities in CEFME community. The KMS and portal administration is organized as an international task and there are some tools for support of that goal. The final part of the article described the future of the CEFME cooperation and further possible KMS and portal adoption.

Keywords: knowledge management system, portal, military university, CEFME, cooperation.

1. INTRODUCTION

The CEFME knowledge management system (KMS) is in practical use from May, 2015. Its design and implementation was based on transformation of KMS for Military universities cooperation (MilUNI, 2014) and adoption for using of the CEFME community (see the result on <http://beta.cefme.eu/>).

The purpose of the research was to analyse of the possibilities in the adoption of the system MilUNI to the CEFME portal. The necessary changes were as a result. After derivation the KMS were changes included: new classes in ontology and new function in the system. Then were discussed procedure of the portal administration in international context and to those appropriate measures were taken.

The requirements of community were included into the KMS. The KMS was prepared for support of regularly activities (meetings) and ad-hoc activities in exchange of teachers and students; in scientific area (projects), in social and sport actions.

The next improvements of KMS were in support of cooperation with the other communities, as iMAF (International Military Academic Forum) and LoD7 (Line of Development) a working group established by the European Security and Defence College (ESDC). The last step of KMS development was in adding new functions for collection people with the special knowledge (expert database).

The paper after introduction describes the CEFME and other communities; explains structure and function of the KMS; specifies the potential possibilities for university cooperation; characterises the administration of KMS in international context, and suggests the father development.

2. CEFME AND OTHER COMMUNITIES

The goal of the CEFME (Central European Forum on Military Education) group (see Table 1) is to support education and training of military professionals and cooperation of the participating universities in teaching, research, exchange of teachers and students; increase mutual awareness and facilitate the organization of joint events.

Table 1: The CEFME community

	State	University	City
1	Czech Republic	University of Defence	Brno
2	Estonia	Baltic Defence College	Tartu
3	Croatia	Croatian Defence Academy	Zagreb
4	Hungary	National University of Public Service	Budapest
5	Poland	National Defence University of Warsaw	Warsaw
6	Austria	Austrian National Defence Academy	Vienna
7	Romania	Carol I National Defence University	Bucharest
8	Slovakia	Armed Forces Academy of General M.R. Stefanik	Liptovský Mikuláš
9	Slovenia	Military Schools Centre	Maribor
10	Serbia	Military Academy Beograd	Beograd

CEFME was established in 2006 to coordinate and support collaboration of the involved Central Europe countries in the education process of military personnel, particularly officers' corps. Forum's secondary goals should make students and/or teachers exchange easier, approximate educational programmes or acknowledge passed each other's courses, primarily those concerning military training.

Establishing meeting took place in 2007 at the University of Defence (UoD) in Brno, Czech Republic. CEFME has initiated a working group that should identify the key competencies for the leavers of strategic courses. The courses produce the most senior officers, such as the General Staff course in the Czech Republic. Working group's activity results shall be used in recommendations issued for

national strategic level courses. The contributions were in interchangeable modularity, comparability and recognition of passed courses.

Military universities leaders meet regularly every year. The agenda includes topics such as Bologna process in military schools' education system, new NATO strategic concept's effect on education, development of cooperation among the schools in the form of article publication in journals, e-learning options and usage, or multinational strategic course for the Visegrad Four countries' military officers.

During these meetings has emerged the idea to create for this community specialized information portal containing all relevant information of the community. UoD promised to create such portal using experience of highly-qualified personnel from the Communication and Information Systems Department of the Faculty of Military Technology.

This software solution is based on originally developed software tool ATOM (AION Topic Maps Engine), by Company AION Zlín, Czech Republic (ATOM, 2015). The UoD, except the cooperation within the CEFME framework, has started more extensively to develop successfully cooperation also within other universities' cooperation communities, i.e.:

- International Military Academic Forum (iMAF), the European initiative for the exchange of young officers inspired by Erasmus).
- LoD7 (Line of Development).

The working group under the acronym LoD7 was established in 2009 by ESDC Secretariat just in time of the Czech EU Presidency. The Czech Ministry of Defence (following French initiative) suggested creating a model similar to Erasmus project for the military colleges, which would allow them to exchange their students. UoD was set up to create web Portal to cover all these activities (CEFME, iMAF, LoD7) as the basic communication and information tool. The KMS MilUNI, developed in 2014, served as a basis for the common web portal enabling easy, well arranged and user-friendly tool for universities' communication.

3. DESCRIPTION OF THE KMS

The KMS is an ontology (structure of the KMS) driven application. The ontology consists of classes or objects: university, university-part, organization, product, geo-tree (counties and cities), person, conference, collection (journal, conference proceedings, or other form of set of articles), article, venue, activity (program, project, and product), and domain tree (areas of interests). The new classes, against MilUNI, are: meeting, action, workgroup, and function. The objects' information is linked to the geography information using geographical IS - the CIA FactBook (FactBook, 2015) in order to use information about countries and cities.

The research methodology used in CEFME portal, its implementation and operation includes steps:

1. Analysis of the KMS MilUNI for the CEFME portal.
2. Derivation the portal and design changes in the ontology.
3. Implementation changes into CEFME KMS.
4. Establishing administration of the portal.
5. Traffic monitoring in the portal.

The portal of the KMS is an internet accessed application; its processing is fully outsourced by SW ATOM developer Company AION CS, Zlín (ATOM, 2015), with excellent cooperation. The structure of the portal is organized by a knowledge principle. It means that information is in context and builds the network; it is possible to browse from a piece of information to another without interruption in one query. System contains the powerful full text search engine and integrate information about objects it selves and with the GIS information.

There are 3 frameworks in the system:

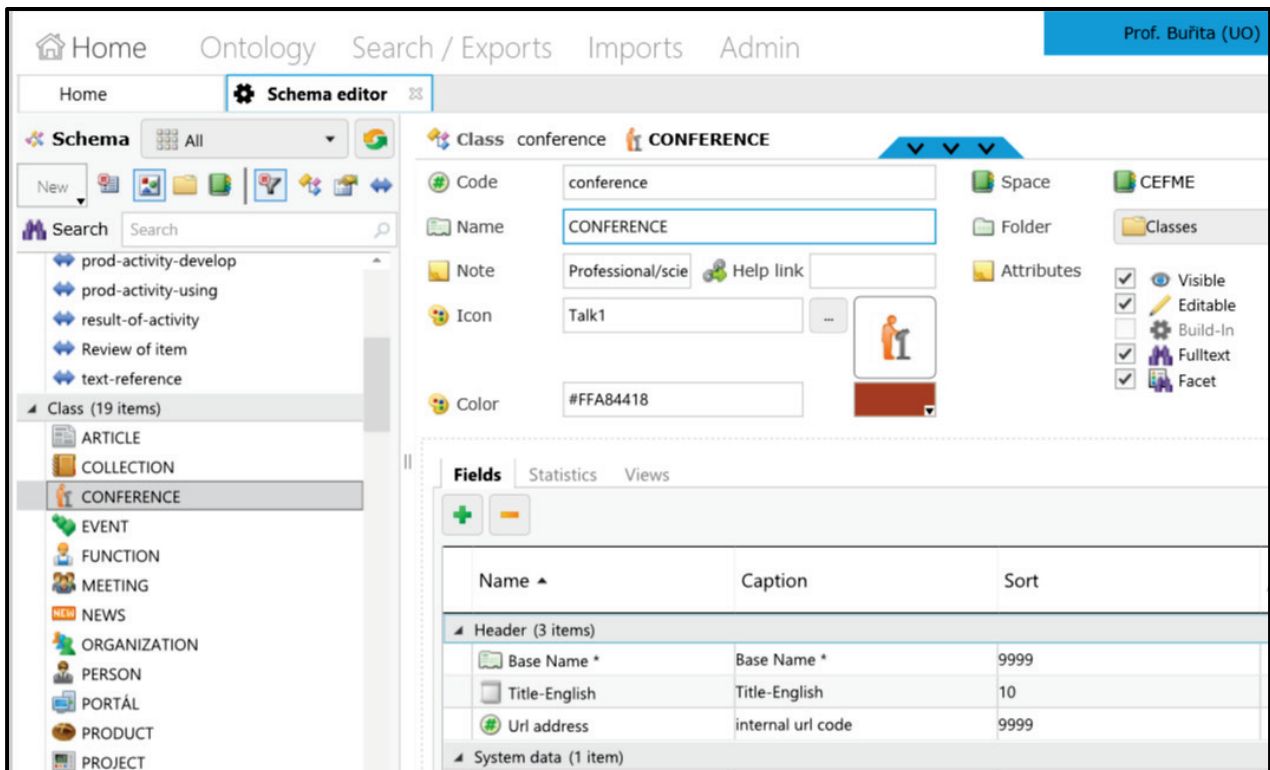
1. Portal for user access.
2. Data Editor for data input and update, see Picture 1 (set of conferences).
3. Schema editor for ontology definition and update, and portal formation, see Picture 2 (class conference).

Picture 1: Data editor - set of conferences



Source: authors

Picture 2: Schema editor, ontology definition, class Conference



Source: authors

Portal consists of the 3 types of pages:

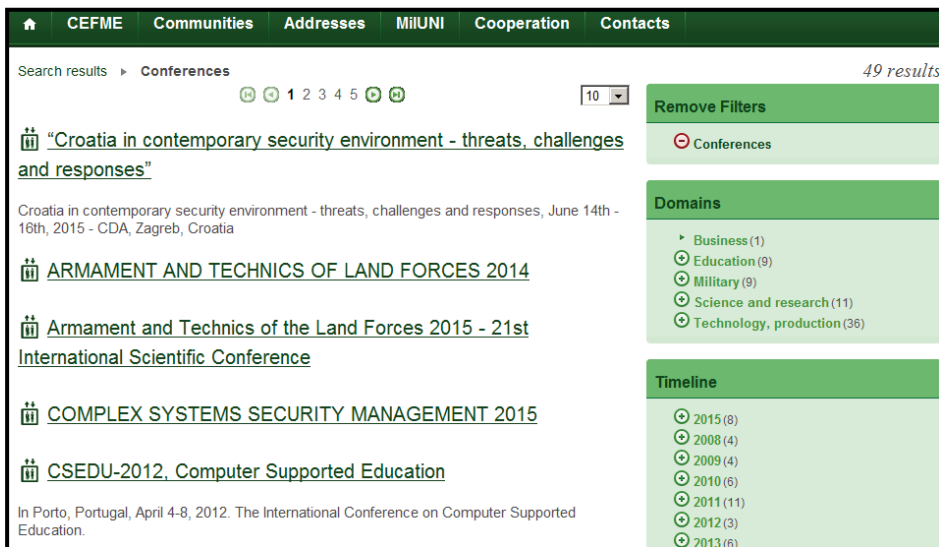
1. The title (main page), see Picture 3.
2. The search result list, see Picture 4 (set of conferences).
3. The detail of object information, see Picture 5 (conference).

Picture 3: The title page of portal



Source: authors

Picture 4: The search result list, set of conferences



Source: authors

The title page of the portal displays the news and offers the main menu with special boxes for access to information. The menu structure and content is defined in the ontology and is possible it to change.


The search result list offers set of objects to choose as a result of the search procedure. The detail page of an object displays information about selected item.

4. EXCHANGE OF INFORMATION IN KMS

Back in the 19th century, Alfred Nobel said: "To spread knowledge is to spread well being". In accordance with this view, the goal of the CEFME is to gather, manage and sharing information concerning education and training of military professionals, teachers and students throughout universities. It means the CEFME portal is possible to use for not only university authorities but also for university students that should be able to study in any CEFME university and meet with comparable conditions of study. These conditions should respect the diversity of cultures, languages and of course military systems. Information and knowledge sharing throughout universities enhances existing organizational research processes, introduces more efficient research processes and could be a way how to remove redundant processes.

Picture 5: The detail page - conference DLSC-2015

DLSC-2015, Distance Learning, Simulation and Communication



The conference topics were Distance Learning and e-Learning; Modelling and Simulation; Communication Systems.
Date Start: 19.5.2015, **Date Finish:** 21.5.2015

Conference objectives:
Experience and information exchange in the field of:
- the current status and prospects of distance learning and e-Learning in the preparation of military professionals and other target groups;
- using the computer modelling and simulation, especially in the command and control process;
- current and future communication systems, their development and usage.

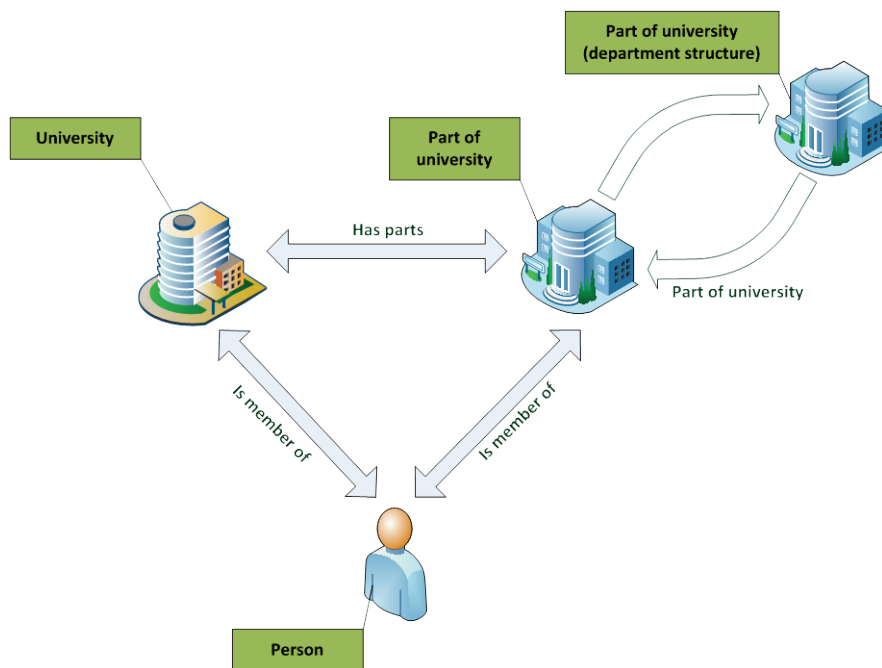
Conference sections:
- Distance Learning and e-Learning;
- Modelling and Simulation;
- Communication Systems.

Professional patronage:
- Prof. Ladislav BUŘITA (Department of Communication and Information Systems, Faculty of Military Technology, University of Defence, Brno, Czech Republic)
- Prof. Erika MECHLOVÁ (Department of Physics, Faculty of Science, University of Ostrava, Ostrava, Czech Republic)
- Prof. Václav PŘENOSIL (Department of Information Technologies, Faculty of Informatics, Masaryk University, Brno, Czech Republic)

Organizers:
- University of Defence, Kounicova 65, 662 10 Brno,

Source: authors

Picture 6: Example of associations between university, part of university and person



Source: authors

The portal CEFME shares information about CEFME universities and cooperating IMAF and LoD7 communities. All information concerning universities are collected, provided and shared by these classes:

- Universities, university parts and persons.
- Research project, conferences and publications.
- Community activities.

Each CEFME university can share information with a division into faculties and departments, and then assign the employee to individual departments. Schema editor of the CEFME portal allows to create associations between:

- University and part of university.
- Part of university and part of university (department structure).
- University and person (employee of university).
- Part of university and person (employee of the faculty or department).

University can share main parameters like:

- Titles and names: Title-English, Title-Original, Number of student, Base name and Internal url code that is important for search function.
- Basic information: Place (location), Address, Web link, Email.
- Education type, relation: Profile of education – military, civilian, Science and research, Social question, Technology and production.
- University description: University hierarchy, Short university annotation, Pictures.
- Association: Functions, Hosted, Referred in article/collection, Accepted cooperation with, Organized conferences, Solves/develops, etc.

In a similar way is possible share main characteristic of the university person (employee):

- Titles and names: Full name, Base name (surname, name).
- Categorization: The role in CEFME, Area of interest.
- Basic information: Titles, Place (location), Address, Email, Telephone number
- Publications: Abstract (national language), Abstract (English), Diagram, Evaluation, Problems.
- Domain of expertise: expert database.
- References: Web links.
- Association: Referred in article/collection, organized conferences, is member (employee) of, related to function, created collection/article, and uses product(s), (example in Picture 7).

Picture 7: Example of association related to a university person

PERSON BUŘITA Ladislav, UoD

Header

Base Name * BUŘITA Ladislav, UoD

Display name BUŘITA Ladislav

Title-English professor

internal url code burita_ladislav

is member (employee) of: **Target**
 Department of Communication and Information Systems, UoD/FMT

solves/develops: **Target**

- Knowledge Management System MENTAL, UoD CZE
- Knowledge Management System MIUNI, UoD CZE
- Military research project MENTAL, UoD

related to function: **Target**

- National ADMIN CEFME, UoD-CZE-Bur
- Project manager MENTAL

created collection/article: **Target**

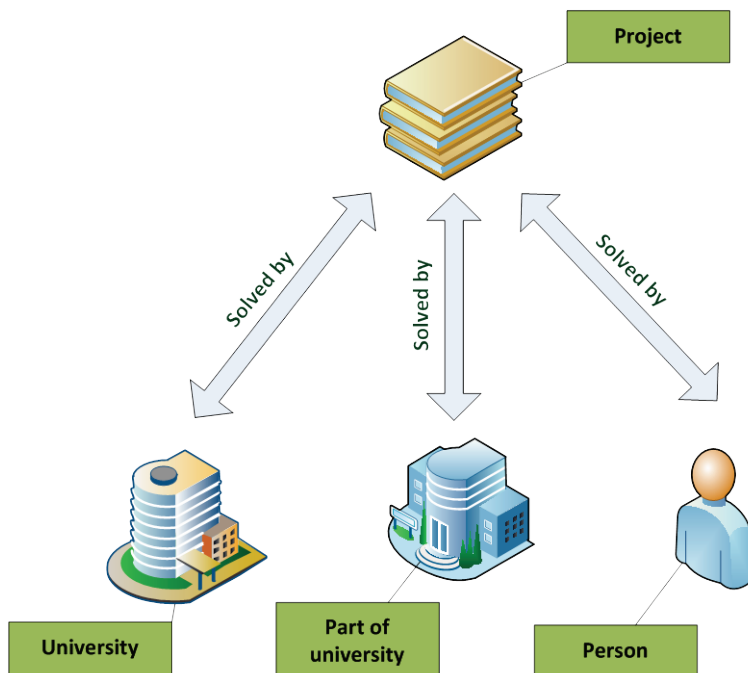
- (DISTANCE) LEARNING FOR DEVELOPING STUDENTS' CREATIVE ABILITIES -2013
- 1 The KMS MiUNI - Description
- 2 The KMS MiUNI - Content (Ontology)

Source: authors

As well as university and person, is possible to share on the CEFME portal detail information about project that can be solved by person, university and part of university. Schema editor of the CEFME portal allows to create associations between:

- University and project.
- Part of university and project.
- Person (employee) and project.

Picture 8: Example of associations between university and project



Source: authors

All projects are time-limited and can be set up into three statuses:

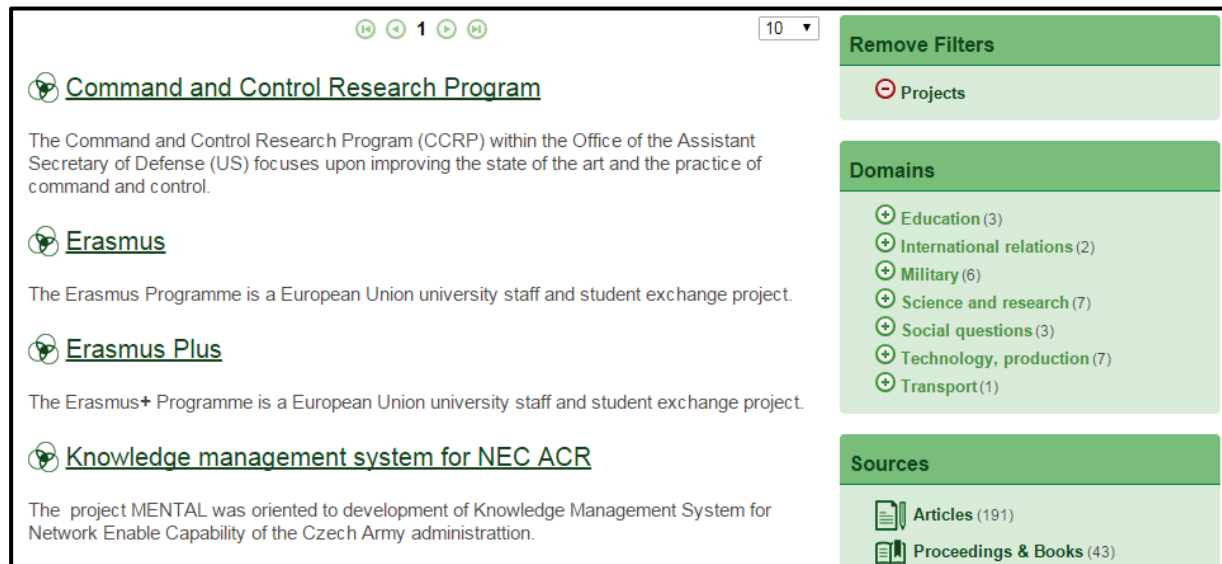
- Designed (whatever university can join the project).
- Solved.
- Finished.

In status Designed is possible for cooperative university members to sign up to solve.

All projects are possible to find on the CEFME portal. For better searching in projects can user use filter that allows display one of seven main domains:

- Education.
- International relation.
- Military.
- Science and research.
- Social question.
- Technology, production.
- Transport.

Picture 9: Projects and domain filter (source authors)



Source: authors

5. ADMINISTRATION OF KMS AND PORTAL

One of the important parts of CEFME are national administrators and it is important to note that administration in the CEFME KMS is an international task. The preparation of national administrators was held on 2nd December 2014 in Brno, under the leadership of Professor Buřita and it was attended by 15 participants from 10 countries (Universities of the CEFME group, see Table 1). Each national administrator was registered, received username, password for access and status of the Admin role, see Picture 9.

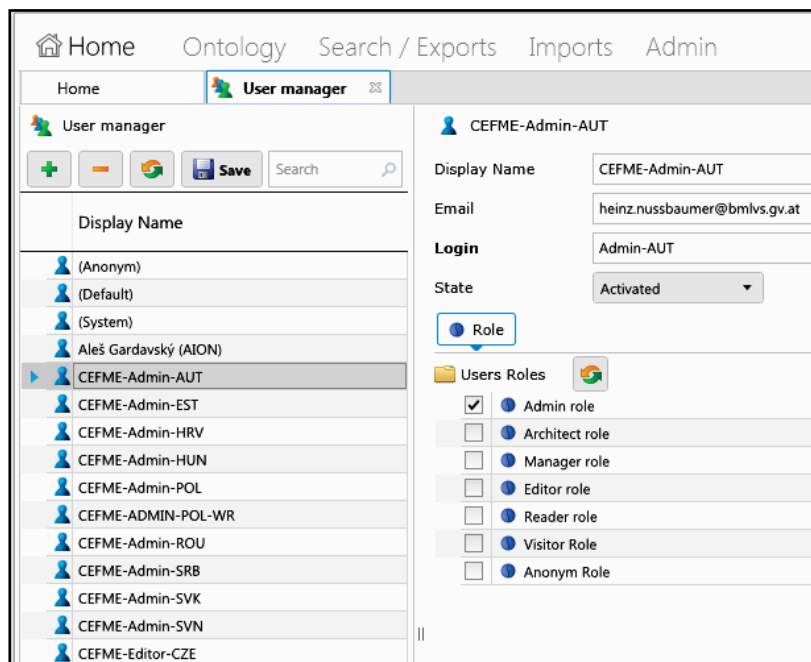
The goals of the course:

- ADMIN preparation for CEFME KMS and other purposes of cooperation (other communities).
- Input, edit, and correct data about the participating universities in the KMS.
- Prepare, collect, discussed suggestion for improvement of the CEFME KMS.
- Form the international project for the CEFME KMS cooperation.

The national administrators are responsible for maintaining of information (classes and properties) concerning university (main features, www-page, postal address, E-mail, university hierarchy, study programs), university activities (project - designed, solved or finished), university events (social activity, sport etc.) and university conferences (upcoming conferences, CEFME organizing

conferences, MCC series, NNEC series, collection, articles, proceeding & books). They are responsible not only for mentioned classes and properties but also for associations between classes. In case of any problem all national administrators has possibility to discussed suggestion for improvement of the CEFME KMS with administrator on University of Defence, Brno.

Picture 10: Set up of the Admin role



Source: authors

6. CONCLUSIONS

The CEFME KMS is the results of the UoD working group. KMS offers a tool for cooperation among military universities in the region of Central Europe. The CEFME portal, as an access point of users to the KMS, is the important and logical step to improve universities education and research capabilities. The CEFME portal gives up to date information concerning universities main features, members, activities, events and scientific conferences for teachers and students. Information is periodically updated by national administrators and this concerning conferences is automatically displayed on the CEFME main page. One of the latest parts of the CEFME portal is support of the iMAF and LOD7 community.

As well as all web portals is the CEFME portal under never ending construction. The national administrators has to input important information related to home university and support usefull functions of the CEFME portal. All national administrators attended course organized by the University of defence and their activity is suportred by team of prof. Ladislav Buřita.

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