

Abstracts of publications

1. **Stanca C.**, Olteanu A., Stinga V., *The labor market in the Blue Economy*, Journal of Physics: Conference Series, Volume 1122, Issue 1, 26 November 2018, Article number 012026, DOI: 10.1088/1757-6596/1122/1/012026

<https://www-scopus-com.am.e-nformation.ro/record/display.uri?eid=2-s2.0-85058226910&origin=resultslist&sort=plf-f&src=s&st1=Stanca&st2=Costel&nlo=1&nlr=20&nls=afprfm-t&sid=b3b6ce9431a659d7dc73df056d1b7e52&sot=anl&sdt=aut&sl=38&s=AU-ID%28%22Stanca%2c+Costel+I.%22+26325787800%29&relpos=0&citeCnt=0&searchTerm=>

Abstract. The main objective of the "blue economy" is to ensure environmental sustainability while promoting social inclusion, economic growth and preservation or improvement of livelihoods (UNCTAD 2014, UNDESA 2014). According to the World Bank in Europe, the Blue Economy represents nearly 5.4 million jobs and generates a gross added value of approximately 500 billion per year. Through this paper we emphasized the impact of the blue economy on the labor market.

2. Andrei C., **Stanca C.**, Acomi N., Dumitrache C., Ancuta C., *Damage stability analysis in particular flooding situations of a multipurpose cargo ship*, 6th International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 13-16, 2018, Constanta, Romania, Volume: 400, Article Number: 082001, DOI: 10.1088/1742-899X/400/8/082001

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Abstract. Flooding of ship compartments is a very common event resulted from ships involvement in marine accidents, such as collision, grounding or structural breakdown. Once ship compartments are flooded to an extended level, the transverse stability starts to be affected and if the situation become dangerous, it can become critical or failing beyond the lower threshold values. In this damaged situation, a proper and accurate calculation and assessment of stability is very important. Calculation of damage stability for flooding situations is a very important subject for those who work in design and operation of ships. However, the subject was treated extensively in respect of tanker ships and less in respect of multipurpose cargo ships. The aim of work presented in this paper is to highlight some particular situations of flooding of compartments on board a multipurpose cargo ship when the stability parameters are decreasing enough so that fails to comply with recommended criteria. The particularity of the study for this type of ships came from the fact that are fitted with large box type cargo holds which in case of flooding are generating large free surface effects with a high negative impact on ship's stability. Thus, four situations of flooding are presented and the analysis of stability parameters are illustrated in line with the actual regulations, in respect of damage

stability, established by international conventions. Based on the results of calculations, the study gives recommendations regarding the actions to be taken in order to limit the dangerous consequences of such situations. The results of the particular flooding situations presented can be used to continue the improvement of design and operation for this type of ships.

3. Dumitrache C.L., Dumitrache R., **Stanca C.**, Andrei C., Ancuta C., *Calculation of naval collisions with general use finite element software*, 6th International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 13-16, 2018, Constanta, Romania, Volume: 400, Article Number: 082010, DOI: 10.1088/1742-899X/400/8/ 082010

<https://apps- webofknowledge-com.am.e-nformation.ro/full record.do?product=WOS&search mode=GeneralSearch&qid=32&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1>

Accession Number: WOS:000461147400190

Abstract. Collisions and groundings are contributing significantly to the structural damage of ships causing almost half of the total losses of ships. The capacity of computers and software made it possible to analyse collision cases as integrated formulation where movement equations are solved for ships' structures and for the surrounding waters by applying general numerical methods such as the finite element method. In order to ascertain the quality of software used in collision calculations, generally there are used relatively simple structures made of stiffened plates which are very similar to the structure of vessel's side plate. In this research, for collision calculus the software ANSYS which offers two main interfaces, ADPL and WORKBENCH. It was used a procedure of explicit dynamic calculus and ANSYS software is greeting the user and requesting only the input of total time of calculus/simulation.

For the explicit dynamic calculus it was used the LS-DYNA software within ANSYS, which is a very reliable and fast solution. We are using calculations and measurements of a structure from the available literature and as a conclusion, we will note that there is a good correspondence between the three categories of results: measured, calculated in the literature and the one calculated with own means.

4. Ancuta C., **Stanca C.**, Andrei C., Acomi N., *Behavior analysis of container ship in maritime accident in order to redefine the operating criteria*, 5th International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 14-17, 2017, Sibiu, Romania, Volume: 227, Article Number: 012004, DOI: 10.1088/1757-899X/227/1/012004

<https://apps- webofknowledge-com.am.e-nformation.ro/full record.do?product=WOS&search mode=GeneralSearch&qid=36&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1>

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Abstract. In order to enhance the efficiency of maritime transport, container ships operators proceeded to increase the sizes of ships. The latest generation of ships in operation has 19,000 TEU

capacity and the perspective is 21,000 TEU within the next years. The increasing of the sizes of container ships involves risks of maritime accidents occurrences. Nowadays, the general rules on operational security, tend to be adjusted as a result of the evaluation for each vessel. To create the premises for making an informed decision, the captain have to be aware of ships behavior in such situations. Not less important is to assure permanent review of the procedures for operation of ship, including the specific procedures in special areas, confined waters or separation schemes.

This paper aims at analysing the behavior of the vessel and the respond of the structure of a container ship in maritime accident, in order to redefine the operating criteria. The method selected by authors for carrying out the research is computer simulations. Computer program provides the responses of the container ship model in various situations. Therefore, the simulations allow acquisition of a large category of data, in the scope of improving the prevention of accidents or mitigation of effects as much as possible. Simulations and assessments of certain situations that the ship might experience will be carried out to redefine the operating criteria. The envisaged scenarios are: introducing of maneuver speed for specific areas with high risk of collision or grounding, introducing of flooding scenarios of some compartments in loading programs, conducting of complex simulations in various situations for each vessel type.

The main results of this work are documented proposals for operating criteria, intended to improve the safety in case of marine accidents, collisions and groundings. Introducing of such measures requires complex cost benefit analysis, that should not neglect the extreme economic impact that may result from such casualties.

5. Axinte T., Nutu C., **Stanca C.**, Cupsa O., Carp, A., *Advanced analysis of the transverse bulkhead of the a general cargo ship*, International Conference on Modern Technologies in Industrial Engineering IV (ModTech), Jun 15-18, 2016, Iasi, Romania, Volume: 145, Article Number: 082004, DOI: 10.1088/1757-899X/145/8/082004

https://apps-webofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=44&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1

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<https://www-scopus-com.am.e-nformation.ro/record/display.uri?eid=2-s2.0-84991202108&origin=resultslist&sort=plf-f&src=s&st1=Stanca&st2=Costel&nlo=1&nlr=20&nls=afprfnm-t&sid=b3b6ce9431a659d7dc73df056d1b7e52&sot=anl&sdt=aut&sl=38&s=AU-ID%28%22Stanca%2c+Costel+i.%22+26325787800%29&relpos=6&citeCnt=1&searchTerm=>

Abstract. The paper presents the main strength factors stressing the transverse bulkhead of a cargo ship. The transverse bulkhead is one of the main components of the hull for a general cargo vessel. There are presented the role and the importance of the general cargo vessel's type using an original drawing made in NX 8.0 Software from Siemens. Further on, we are presented the importance of the transverse bulkhead of the general cargo ship's hull. Next there are analysed the formability of the transverse bulkhead's material and then we are determining the shear, normal and von Mises stresses in the traverse bulkhead, using the finite element method. Once the stresses are computed, there are also determined the fatigue life, strength safety factor and fatigue safety factor. The analysis of the transverse bulkhead is important for the safety of the general cargo vessel type because if this component of the ship does not resist to the various stresses and high deformations during bad storms on the sea or if the cargo is stored inappropriately, deformations or even breakage of the transverse bulkhead can occur, thus causing damages of the cargo ship, especially under heavy storm.

6. Axinte T., Nutu C., **Stanca C.**, Cupsa O., Carp A., *Aspects regarding analysis of the work deck from a support vessel*, International Conference on Modern Technologies in Industrial Engineering IV (ModTech), Jun 15-18, 2016, Iasi, Romania, Volume: 145, Article Number: 082005, DOI: 10.1088/1757-899X/145/8/082005

https://apps-whoofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=47&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1

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Abstract. The authors are presenting an analysis of the work deck only for the support vessel, a ship having in its structure among others: deck cranes and helicopter deck. The work deck is one of the most important parts of the support vessel's hull.

We are starting the paper by presenting the role and the importance of the support vessel's type, by using an original execution drawing carried out using the Unigraphics NX 8.0 Software from Siemens.. Further on we can determine the shear, normal and the von Mises stresses pertaining to the work deck by using the finite element method. After determination of these stresses we can assess fatigue life, strength safety factor and fatigue safety factor. In order to determine the fatigue, the loading pattern only with the full unit cycle will be used. As for determining the safety factor only the ultimate strength stress criterion with the stress type von Mises from failure theories, will be used.

7. **Stanca C.**, Ancuta C., Acomi N., Andrei C., *Assessment of current criteria for dynamic stability of container vessels*, Conference on Modern Technologies in Industrial Engineering IV (ModTech), Jun 15-18, 2016, Iasi, Romania, Volume: 145, Article Number: 082022, DOI: 10.1088/1757-899X/145/8/082022

https://apps-whoofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=50&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1

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Abstract. Container vessels sailing through heavy weather are exposed to a significant variation of stability due to specific shape of the hull combined with the action of the waves. Even if the weather forecast is transmitted to vessels, the way of acting it is a matter of officers' experience. The Maritime Safety Committee, under the International Maritime Organization, has approved the Guidance to the

master for avoiding dangerous situations in adverse weather and sea conditions. Adverse weather conditions include wind induced waves or heavy swell. The development of dangerous phenomena such as surf-riding and broaching to, synchronous and parametric rollings is a result of a these adverse conditions which has to be encountered by the vessels. Understanding the dynamic stability of the vessel in the waves and ship's behaviour based on mathematical and physical rules is a difficult task, any effort in order to assess these components are salutary. To avoid excessive acceleration and forces which can damage the hull of the vessel, lashing and integrity of containers, course and speed may need to be changed for the vessel's motion in heavy seas. Specific software have been developed as aids for evaluating the response of the vessel in heavy seas according to parameters variations. The paper aims at assessing of current criteria for dynamic stability of a container vessel model ship in order to determine the ways for avoiding dangerous conditions. The results should be regarded as a supporting tool during the decision making process.

8. Acomi N., Acomi O.C., **Stanca C.**, *The use of ECDIS equipment to achieve an optimum value for energy efficiency operation index*, 3rd International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 17-20, 2015, Mamaia, Romania, Volume: 95, Article Number: 012071, DOI: 10.1088/1757-899X/95/1/012071

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Abstract. To reduce air pollution produced by ships, the International Maritime Organization has developed a set of technical, operational and management measures. The subject of our research addresses the operational measures for minimizing CO₂ air emissions and the way how the emission value could be influenced by external factors regardless of ship-owners' will. This study aims to analyse the air emissions for a loaded voyage leg performed by an oil tanker. The formula that allows us to calculate the predicted Energy Efficiency Operational Index involves the estimation of distance and fuel consumption, while the quantity of cargo is known. The electronic chart display and information system, ECDIS Simulation Software, will be used for adjusting the passage plan in real time, given the predicted severe environmental conditions. The distance will be determined using ECDIS, while the prediction of the fuel consumption will consider the sea trial and the vessel experience records. That way it will be possible to compare the estimated EEOI value in the case of great circle navigation in adverse weather condition with the estimated EEOI value for weather navigation.

9. **Stanca C.**, Stinga V., Georgescu S, Cupsa O.S., *The evaluation of the environmental impact and the external factors of urban transport in Constanta*, 3rd International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 17-20, 2015, Mamaia, Romania, Volume: 95, Article Number: 012129, DOI: 10.1088/1757-899X/95/1/012129

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Abstract. Transport activities are known to have a substantial negative environmental impact especially when referring to the urban transport. Studies have shown that external costs (as accidents, congestion, air emissions, climate change or noise) are an important subject of the European Union, that is why were carried out several research projects. This paper will highlight the current requirements and methodologies used by the European Union regarding the impact of the external costs of urban transport in most of the growth poles of Europe. Taking into consideration that Constanta is considered to be one of the seven major growth poles of Romania for the 2014-2020 period, this study aims at analyzing how the results of similar studies made in others centers of the European Union can be applied in Constanta, showing different methodologies and evaluations regarding the external costs and their impact. We will analyze how the conclusions obtained in previous projects are applicable to data collected by us throughout a field research on the technical description of the means of transport used it this city. As methodology, we will use one that was adopted by the European Union regarding the estimation of urban external costs, taking into consideration that each externality has a different method for estimating it. The results of this study may be useful in developing the sustainable urban mobility plan for Constanta, as a strategic plan design to reduce the impact of urban transport for a better quality of life at present and in the future. Through this paper we will get an insight into the urban transport in Constanta, but also data on external costs generated by the urban transport, given that road transport is considered to be the most polluting transport mode.

10. Stanca C., Acomi N., Ancuta C., Georgescu S., *Comparative analysis of different loading conditions on large container ships from the perspective of the stability requirement*, 3rd International Conference on Modern Technologies in Industrial Engineering (ModTech), Jun 17-20, 2015, Mamaia, Romania, Volume: 95, Article Number: 012072, DOI: 10.1088/1757-899X/95/1/012072

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Abstract. Container ships carry cargoes that are considered light from the weight point of view, compared to their volumetric capacity. This fact makes the still water vertical bending moment to be in hogging condition. Thus, the double bottom structure is permanent subject to compressive load. With the enlargement of container ships to the Post Panamax vessels, the breadth to depth ratio tends to be increased comparative to those of Panamax container ships that present restriction related to maximum breadth of the ship. The current studies on new build models reveal the impossibility for Panamax container ships to comply with the minimum metacentric height value of stability without loading ballast water in the double bottom tanks. In contrast, the Post-Panamax container ships, as resulted from metacentric height calculation, have adequate stability even if the ballast water is not loaded in the double bottom tanks. This analysis was conducted considering two partially loaded port-container vessels. Given the minimization of ballast quantities, the frequency with which the still water vertical bending moment reaches close to the allowable value increases. This study aims to analyse the ships' behaviour in partially loaded conditions and carrying ballast water in the double bottom tanks. By calculating the metacentric height that influences the stability of the partially loaded port container vessels, this study will emphasize the critical level of loading condition which triggers the uptake of ballast water in the double bottom tanks, due to metacentric height variation.

- 11. Stanca C.,** Stinga V., Raicu G., Tromiadis R., *Improvement opportunities by using remote audit in the maritime transport*, 14th International Conference on Informatics in Economy (IE 2015), Apr 30-May 03, 2015, Bucharest, Romania, pp. 418-421, 2015

https://apps-whoofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=8&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1

Accession Number: WOS:000362796900067

Abstract. The specific of maritime transport involves a large number of audits and inspections performed on board ships. At present there is no important shipowner running a shipping company without having an integrated management system including quality, environment, occupational health, etc. The international maritime conventions impose other internal/external audits regarding safety management and ship security. The need to increase efficiency led to a high level of optimization of time spent by ships in ports and the time available for audits significantly decreased. To be in line with actual IT&C developments the last edition of the standard establishing guidelines for auditing management systems ISO 19011, adopted in 2011, introduced the concept of remote audit. This paper presents the results of research regarding the opportunities to use the remote audit for the maritime ships increasing the possibilities to harmonize the audit program with the ships port calls and to decrease the supplementary costs involved by auditors' traveling and accommodation.

- 12. Stanca C.,** Mina S., Surugiu S., Cristea V.G., *Debates on Private Sector Participation's in Water Governance in Europe. Veolia's Qualitative Analysis in Romanian Case*, 5th International Conference on LUMEN Transdisciplinarity and Communicative Action (LUMEN-TCA), Nov 21-22, 2014, Targoviste, Romania, pp. 709-717, 2015

https://apps-whoofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=68&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=1

Accession Number: WOS:000360478000123

Abstract. Public-private partnership has been presented as an opportunity to improve the input and output legitimacy of global environmental governance. Functional decentralization can generate a considerable improvement in the quality of life of the population and in the functioning of a city and its services. We reported in this paper some conclusions regarding externalization, public-private partnership and improving the quality of life of the correct organizing of public services. We exemplified the well practice examples from Portuguese Experience, Armenian Experience, Spain private sector participation in Governance, and the Romanian case. After an important qualitative analyse of all these results we established if the New Public Management ideas are correct, or not. Some of the results contradict the New Public Management ideas: mainly that private sector participation through public-private partnerships in the delivery of public services will inevitably lead to a better use of scarce resources, and consequentially to lower user prices and higher quality goods and services. Our empirical analysis demonstrates that user prices have a stronger relationship with the organizational costs than with property or the adopted management model in the delivery of public services.

- 13.** Acomi O.C., Acomi N., **Stanca C.**, *The importance of correct passage planning and weather prediction in lowering the ship's carbon emissions*, 16th International Congress of the International-Maritime-Association-of-the-Mediterranean (IMAM) - Towards Green Marine Technology and Transport, Sep 21-24, 2015, Pula, Croatia, pp. 755-759, 2015

<https://www-scopus-com.am.e-nformation.ro/record/display.uri?eid=2-s2.0-84959522602&origin=resultslist&sort=plf-f&src=s&st1=Stanca&st2=Costel&nlo=1&nlr=20&nls=afprfnm-t&sid=b3b6ce9431a659d7dc73df056d1b7e52&sot=anl&sdt=aut&sl=38&s=AU-ID%28%22Stanca%2c+Costel+i.%22+26325787800%29&relpos=11&citeCnt=0&searchTerm=>

Abstract. The air pollution produced by ships represents a concern of the International Maritime Organization and, seeking its reduction, the members of Marine Environment Protection Committee developed technical, operational and management related guidelines. The subject of this paper is the analysis of the operational measures, recommended to be applied on-board vessels to estimate the energy efficiency of the voyage. The operational measures refer to the concept of EEOI—Energy Efficiency Operational Index, which represents the relationship between the carbon air emissions and the vessel's cargo work. This study emphasizes the evolution of the EEOI while changing the ship's route due to the meteorological conditions, for a complete voyage performed by a chemical tanker. The instrument preferred is the comparative analysis, considering the voyage affected by meteorological conditions against the voyage performed in normal conditions, along the shortest route.

- 14.** Tromiadis R., **Stanca C.**, *Comparative analysis of tanker ships incidents and their environment impacts*, ModTech International Conference - Modern Technologies in Industrial Engineering, Jun 27-29, 2013, Sinaia, Romania, Volume: 837, pp. 775-779, DOI: 10.4028/www.scientific.net/AMR.837.775, 2014

https://apps-webofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=8&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=2

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<https://www-scopus-com.am.e-nformation.ro/record/display.uri?eid=2-s2.0-84891652266&origin=resultslist&sort=plf-f&src=s&st1=Stanca&st2=Costel&nlo=1&nlr=20&nls=afprfnm-t&sid=b3b6ce9431a659d7dc73df056d1b7e52&sot=anl&sdt=aut&sl=38&s=AU-ID%28%22Stanca%2c+Costel+i.%22+26325787800%29&relpos=12&citeCnt=0&searchTerm=>

Abstract. The paper presents a comparative analysis of tanker ships incidents and their environment impacts. The focus is on oil tankers because this type of ships poses the highest environmental risk. By the sheer amount of oil carried, modern oil tankers can be considered a threat to the environment. In case of a maritime accident a ship can suffer fracture of the ship's hull that may lead to oil outflow leading to environmental consequences or stability problems, which may again result in capsizing of the vessel. In terms of the consequences for the vessel maritime accidents can be classified in different categories. Severe accident means an accident involving a total loss of the ship, loss of life or severe pollution. Accident that is not severe which may involve: fire, explosion, stranding, collision damage caused by bad weather, damage caused by ice, fracture in the hull or suspected damage to the body. This may also lead to pollution. And incidents that are circumstances or events caused by, or related with the operation of a ship from which the ship or any person is being hazard or results in serious damage to the ship, the ship's structure or the environment. Oil spills have devastating effects on the environment. Shipping regulations have been developed or modified over years on the basis of some significant marine accidents. The regulations are mostly concentrated on reducing the consequences of maritime incidents. Following the Exxon Valdez spill, the United States passed the Oil Pollution Act of 1990 (OPA-90), which excluded single-hull tank vessels of 5,000 gross tons or more from U.S. waters from 2010 onward, apart from those with a double bottom or double sides, which may be permitted to trade to the United States through 2015, depending on their age. Following the sinking's of the Erika (1999) and Prestige (2002), the European Union passed its own stringent anti-pollution packages (known as Erika I, II, and III), which also require all tankers entering its waters to be double-hulled by 2010. Oil tankers are only one source of oil spills. Air pollution from normal tanker engines operation and from cargo fires is another serious concern. Ship fires may not only result in the loss of the ship due to lack of specialized firefighting gear and techniques but the fires sometimes burn for days and require evacuations of nearby residents due to the dangerous smoke.

15. Balta C., Bica G., **Stanca C.**, *Political and military action frame of the european union within the crises management*, 6th Annual EuroMed Conference of the EuroMed-Academy-of-Business, Sep 23-24, 2013 Cascais, Portugal, pp. 2555-2559

https://apps-webofknowledge-com.am.e-nformation.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=8&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=3

Accession Number: WOS:000338727100159

Abstract. The European Union is one of the active non-state actors on the world scene concerning the crises and conflicts management. Therefore, it operates by voluntarily assuming a large variety of political and military roles for preventing and resolving the crises and conflicts, which can occur in the European space and its strategic vicinity.

Continuing the process of enlargement of the Union has permitted the development of a systematic political dialogue concerning the security issues on a larger scale between Brussels and the candidate countries. In this context, the combination of the "civil" power instruments, which result from the

first pile of the Union's activities, in the External Policy and of Common Security, and in the project of Europe's defence, as is built now, that EU could, in time, gain an international political dimension to match its economic state.

In order to appropriately assume its roles, EU has developed its societal structure and networks with institutions, civil and military capacities, able to significantly enhance the crises and conflict processes management no matter the place in the world. The European Union also disposes of other resources to achieve its objectives - such as policies and programs to handle the crises from both civil and military areas.

EU political-military role in its internal and external plan The European Union, acting in its capacity of regional organization, has a highly recognized status, additionally assuming a large variety of political and military roles. The political roles are assumed by the EU both internally and externally. Internally, it insures the social peace through specific guarantees and insurances for all its citizens - from the right to life to freedom of speech. The social protection and assistance within the Union generate a beneficial climate for all citizens. The reunification of the continent is another major political role assumed by the Union and the member states. With the disappearance of the ideological barriers, the destruction of communism on the continent and the dissolution of the USSR, the European Union has started a new, long and complex process of enlargement. By receiving new members, from the ex-communist states, new challenges have emerged. One of the main preoccupations of the European institutions consists in guaranteeing and insuring the security of its citizens. "The 21st century Europe continues to deal with security issues"³⁸. In order to guarantee an efficient process that ensures the member states' security the EU must adopt a constructive attitude in the relations with its neighbouring regions. These neighbouring regions are: the Southern Mediterranean, the Balkans, the Caucasus and the Middle East. On the other side, it must protect its military and strategic interest through its alliances, especially NATO, and the emergence of consistent European security and common defence policies.

The military roles are exercised both by preventing the internal and external crises and conflicts and by their adequate management. In this purpose, the EU and the member states are actively, voluntarily and responsibly committed to insuring the security of the European citizens.

In the external scene, in accordance with its charter, the EU has various roles on the European continent as well as in other regions. In principle, the EU can exercise its influence both within its borders and abroad.

The political roles of the EU outside its borders consist of its different external politics, through which relations maintained with numerous partners form all around the world. To this end, different instruments are utilized, such as cooperation agreements and financial programs.

The principal domains where the political roles of the EU manifest themselves are:

humanitarian help - the EU tries to help the victims of the natural or human catastrophes, by offering financial and material help; cooperation development - the EU has a cooperation development policy for eradicating poverty in emerging countries, in order to sustain a sustainable growth model. Through this policy, the EU encourages good government and searches to protect human rights throughout the world.

16. Balta C., Stanca C., *Managing the crisis in the European Union*, 6th Annual EuroMed Conference of the EuroMed-Academy-of-Business, Sep 23-24, 2013 Cascais, Portugal, pp. 2560-2565

https://apps-webofknowledge-com.am.e-information.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=8&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=4

Accession Number: WOS:000338727100160

Abstract. Civilian crisis management has become an important part of the EU security policy. However, the provision of civilian capabilities is a challenge for the European Union. The effectiveness of numerous missions is limited, reflecting, on the one hand, the current crisis of resources to conduct "state-building" missions and explains, on the other hand, the EU deficits as the absence of strategic interventions. A level of differentiated ambition at regional EU level is thus required, given the increasingly critical commitment of weak states.

The civilian dimension of the EU Common Security Defence Policy (CSDP) has evolved dynamically in recent years. As such, specific institutions have been created to plan and implement EU civilian missions. As the military capabilities have developed, civilian capabilities have been established for civilian crisis management. The overall objective of 2008 targeted six priority areas for civilian crisis management: police, rule of law, civil administration, civil protection, observation missions and supporting EU special representatives. The overall objective of 2010 highlighted the importance of simultaneous planning of interventions, training staff and the multilateral exchange of verified practices.

17. Raicu G., Stanca C., *Advanced concepts in nanomanipulations*, Conference on Advanced Topics in Optoelectronics, Microelectronics, and Nanotechnologies IV, Aug 28-31, 2008, Constanta, Romania, Volume: 7297, Article Number: 72971Z, DOI: 10.1117/12.823683, 2009

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Abstract. Atomic force microscopes and scanning tunneling microscopes can be used to look at surfaces and to move atoms around. By designing different tips for these microscopes, they can be used for carving out structures on surfaces and to help guide self-assembling structures. The top-down approach anticipates nanodevices that must be built piece by piece in stages, much as manufactured items are made. The properties such as non-linearity, oversensitivity to environmental parameters, geometrical/material-dependence, etc. result in the particular design of each nanomanipulation task according to specific conditions and disturbances. The precision and the speed of nanomanipulation are two important factors in the construction of a dimensionally well-defined pattern in a minimum amount of time.

18. Stanca C., Bejan R., Varsami A.E., *The MBOC modulation*, Microelectronics, and Nanotechnologies IV, Aug 28-31, 2008, Constanta, Romania, Volume: 7297, Article Number: 72972T DOI: 10.1117/12.823713, 2009

https://apps-whoofknowledge-com.am.e-information.ro/full_record.do?product=WOS&search_mode=GeneralSearch&qid=8&SID=C6QjLN2jHcarHLMx3g3&page=1&doc=6

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Abstract. The article try to shed some light on the long process that has led to the signal baseline. Special care is placed on describing all the modulations of the final Galileo Signal Plan.

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April 2021