

## **Risk Management – Part of the Security Strategic Management (Risk Analysis Contribution to the Criminality Prevention)**

**Resume:** What causes the interest to the risk management in the security strategic management? In the world of global challenges precise definition of risks and threats do not exist, there are no universal decisions, to be applied to every specific case by the decision makers, for countering them also. Just for that the more growing uncertainty in the security environment makes us pay greater attention to the questions related to risk management. Incorporating the problems of risk in the management of an organization is an important issue for any manager, especially for those in the security sector.

The real situation in our country shows, that the conditions for the risk management, which must incorporate all levels of management, are still not guaranteed.

The relative commitments, from senior leadership, to realize such kind of policy, are lacking. A serious shortcoming is also the small number of capable risk management experts in the different sectors, which affects the quality of the results, based more on the intuition and the professional experience of the experts, than on the theories and methods, that are scientifically proved.

### **1. Introduction**

In the present report\*, the main effort is stressed on the overcoming of the existing lack of adequate set of instruments for risk management [6, 9] and the main contribution related to risk analysis for crime prevention is presented. The risk analysis unveils as an element of the overall process of risk management, which is described in details in the Model of risk management in the defence and armed forces planning, developed by the ‘Strategic Planning’ directorate – MoD. The main goal of the **Model** is to enhance the effectiveness of management in the field of the security.

The National Security Strategy of the Republic of Bulgaria<sup>1</sup> shows the national interests, the needed conditions and prerequisites for their realization through neutralizing the risks and threats for the country and its citizens. National security exists, when the jurisdiction-legitimate national state (or the preservation of its fundamentals) is guaranteed through the use of political, economic, legislative, diplomatic and military power. Hans Morgenthau [5] defines “national security” as integrity of the national territory and its institutions. The guarantee of this security is related mainly to the realization of the mandatory managerial functions of the institutions, aimed at effective application of the security policy and guarantee the rule of law and to obey to laws. The mandatory managerial functions include risk management as a way to cope with the unknown risks and crime.

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\*The opinion expressed in this publication presents the personal opinion of the authors and in no way does not engage the institution, where they work.

<sup>1</sup> National Security Strategy of the Republic of Bulgaria , State Gazzette, issue 19 dated 8<sup>th</sup> March 2011.

Crime as socially dangerous phenomenon appears at different levels of management – strategic (related to management of the organization), operational (related to the main processes/activities in the organization) and tactical (related to the work of every participant in the process). It can be expressed in actions for security violation on purpose (terrorist acts, murders, organized crime) and/or lack of adequate actions for prevention of dangerous public events, bad management, bureaucracy, misuse and non effectiveness of state institutions (for example corruption).

Crime has many aspects and all of them erode the citizen's sense of security, the authority of institutions and the international image of the country. For the successful guarantee of one counter corruption reform it is necessary both political will and clear strategy for its application as well as objective external assessment, which in case of need plays the role of a corrector. Therefore only through the risk analysis we achieve objective assessment of the identified risk factors and the effects of the negative events are being minimized. In substance, risk management is a cyclic systematic process [2, 4, 7, 8] for effective reduction of the uncertainty, which threatens the organizational goals and security.

## **2. Strategic security management**

The problems for the security of the society appeared alongside with crime and as a result of bad management [1, 3]. The risks and the threats regarding their nature and form of how they appear become more and more asymmetric and significantly influence the security environment [9]. The set of instruments needed<sup>2</sup> for security management include analysis and assessment of the status and the trends in the security environment and taking preventive measures.

For effective work of the institutions and guarantee of the security in the state it is necessary the multiple aspects [12] of their activities to be presented in an integrated way through one of the approaches for organizational modeling. The relative organizational model [11] gives unified medium for presenting all basic functional and systematic points of view, as well as opportunities for measuring towards settled strategic goals through an objective system of performance indicators and analytical techniques. The risk analysis as an element of the management process can contribute to the enhancement of the effectiveness of the different social organizations and preventively to suggest measures to decrease the crime.

The new state of the art technologies, from which the society can not give up, bring in high level of uncertainty, while at the same time the society is not in a state to control effectively the ecological, economic and social consequences. This leads to the emergence of a new “risky society”.

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<sup>2</sup> In part V, National security strategy, ibidem, pp. 23.

### ***2.1. Risky society***

The term “risky society” is one of the most common used in the contemporary globalization theories and belongs to the German sociologist Ulrich Beck [1]. According to him the *risky society* means a phase in the development of modern society, in which the ecological, social, political and individual risks more and more go out beyond control of the institutions of the industrial society. In the risky society, however, the debates on dangers, emerging in the course of the development, affect not only the public and the political sphere, but also the private one. That’s why, the risky society, according to Beck, reflects one confrontation between the modernization and the consequences resulting from it. This society forms when the dangers, produces by industry, go beyond the limits of the opportunities for assuring safety and security against them. In the risky society the growth of rationality (technical, bureaucratic, economical, legal etc.) comes across its limits, and the uncertainty comes back. This means that more and more social conflicts are perceived as risky problems.

Together with the globalization of the market economy, the risks, related to it are also changed, both social and political. Here, Beck shows the example with the crisis in Asia during the 90-s, where the moving stream of capitals can abandon in panic whole countries and regions, lead only by loss reduction [1], and rise of the profit, resulting in sharp economical, social and political disturbances in these regions. The German sociologist underlines that in contemporary capitalist economy the productivity of labor increases very fast. This means that with less labor you can produce more goods, and this leads to the increase of unemployment. Labor becomes more and more unstable all over the world as non-full working day, part-time employment, self-employment. This agility of labor means “transfer of the risks from the state and the economic life to the individuals”.

As most important are marked the ecological risks, and crime. The main threat is defined to be the terrorism. The causes for the terrorism to come up are different and one of them is the injustice. As an example it is not fair more than 80% of the world population to be exposed to starvation, while a group of oligarchs piles up treasures and prosperity on their backs. They are in possession of political, economic and financial levers and means for pressure. In this way they concentrate power in their hands, which makes the people powerless, and which leads to serious disregard from people’s side. In this way a wave of extremism and terrorism is being born, which turns into a global problem and a risk prerequisite.

### ***2.2. Particularities of the risk***

The risk is a phenomenon from the real life, it exists objectively and it cannot be abolished, but only it can be limited, transferred, exchanged, fragmented, compensated. Under the term “risk” in this report an effect of the uncertainty upon the goals of a given organization and its security is understood [7]. Risk exists, when there is uncertainty, lack of security and lack of exact decision on a future moment of

time. The risk lies in the future, but not in the past. The risk is ahead of us, but not behind us. “If we look behind shoulder, we will not see the rushing upon us car”.

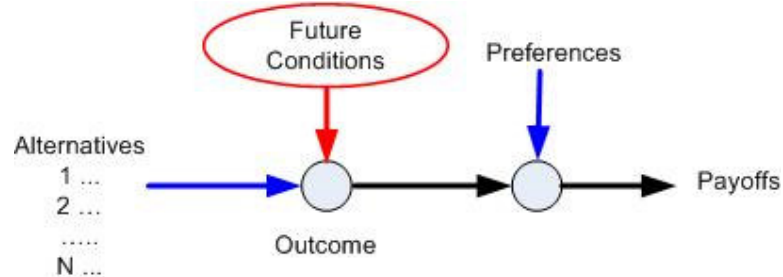
The uncertainty is a state of lack of enough information, related to the understanding and knowledge for the specific effect, its consequences or probabilities [6]. The goals can have different aspects (financial, health care related, safety related, ecological) and can be applied at different levels (strategic, structural element, product or process).

The causes for risk can be natural physical forces, on purpose criminal activity, market etc. [7]. Most of the risks are predictable. Such risks are called *known risks*. The risks, which cannot be predicted, can only be controlled with techniques such as creation of **financial, time related or material reserves**.

In fact the risk management at the highest level of abstraction is nothing else but a systematic answer to the uncertainty. At Figure 1 this uncertainty is depicted as unknown future conditions. From a strategic security management point of view, the uncertainty comes up from the mutual effect among several variables, independent from each other, part of which is extremely difficult to analyze and assess. More precisely the risk management is an attempt to unveil and present the negative results and consequences from the action of a threat carrier, using some vulnerabilities of a given specific subject – organization, with the aim destructive effect upon something, that has and means certain value. Generally the risks are been assessed against potential harmful consequences and probabilities such consequences to happen [6].

### 2.3. Why is risk analysis performed?

The risk comes up in management, reviewed both in static and in dynamic, under the form of crossing each other and lack of coincidence between the actual and the expected or desired results [7].



**Figure 1.** Abstract presentation of risk management as a possible choice of alternative, depending on future uncertain conditions and according to pre-set preferences

For effective, timely and tuned according to uncertainty strategic management of the security of our state and for an adequate prevention of crime it is mandatory a risk analysis and risk assessment to be carried out as an element of the overall risk management process. As we need more clarity in relation to decisions, affecting future security of our country, the objective analysis and management of the risk will change the way of planning and activity development in the institution, organization or projects. The main attention is focused on the risks that could hamper the

realization of the main task and the achievement of the final goal of the organization. The risk assessment in the near term is the method for identification of zones, conditions or events with potentially high level of risk.

#### ***2.4. How much risk is acceptable?***

The risk management is defined as a *process of streamlined treatment of the risk for its minimization as:*

- lessening the probability to happen;
- limitation of the unfavorable influence of the risk events upon the expected results, while minimizing the expenditures of funds and resources.

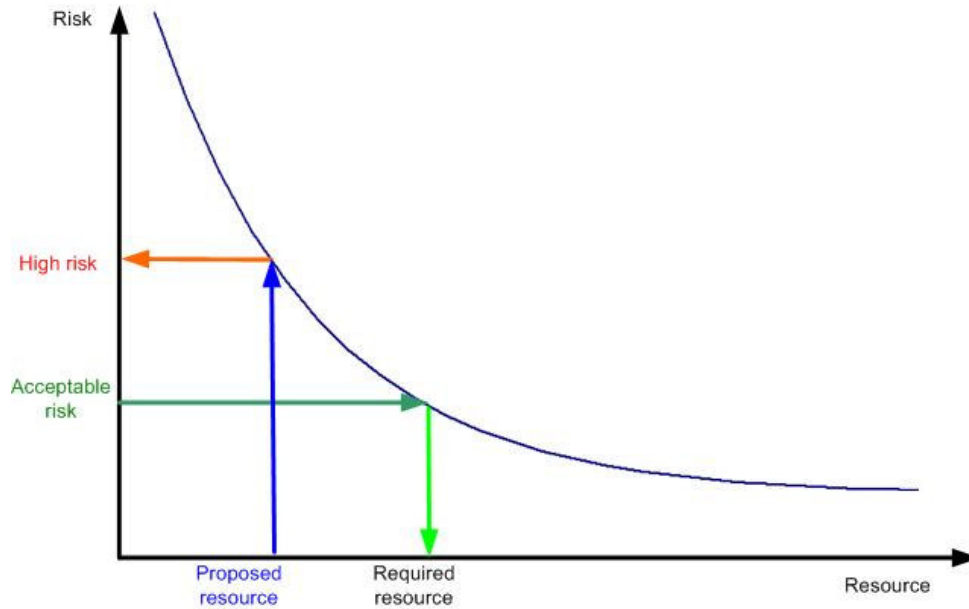
In order to define the quantity of risk, which we can accept, or which is acceptable for the proper functioning of one system (institution), the level of preference (related to the main goal) must be defined. In other words, this is the deviation from the absolute minimum we still can carry out obligations. If the goal is carrying out of the mission with losses under 7%, then the decision for achieving this goal, having risk assessment of 20% for failure to carry it out (1 out of 5 options wont succeed), will be chosen from alternatives with less than 7% losses.

The main focus in the **Model** is set upon 3 types of main activities:

- organizational activities – in the stage of preparation of the requirements and team establishment;
- objective assessments using mathematical tools;
- subjective preferences for detailed solution of choosing the right decision;

Obviously it is not possible to be established an overarching and complicated model of risk management. Embracing all kinds of risks is not needed. In the model only the objective, manageable sources of risk, regarding the main goal, are followed. When having already fully established model of risk management, with clear goal and preset preference, the different options for achieving this goal can be compared, taking into consideration this preference with minimum resources needed. At Figure 2, the relationship between the level of risk and the resources needed is shown. This is a reciprocal relationship on principle. The trade-off for taking proper decision lies between the required resource for acceptable risk and the suggested (smaller) available resource, but with high level of risk.

The classification and prioritization [4, 6] of the risks is done according to criteria, defined within the framework of the organizational policy in the field of risk management, which are included in the risk management plan. In this way a preliminary assessment of which risks from those identified must be managed, can be made. The security of our country is a function of the level of the risk, which our country is ready to accept. This means that when having more non-hazardous behavior (political min. risk, defined as acceptable) and having reasonable management with reserve of resources, people and technologies we will limit the risk (R) within the interval  $[0 \div R \text{ acceptable}]$ .

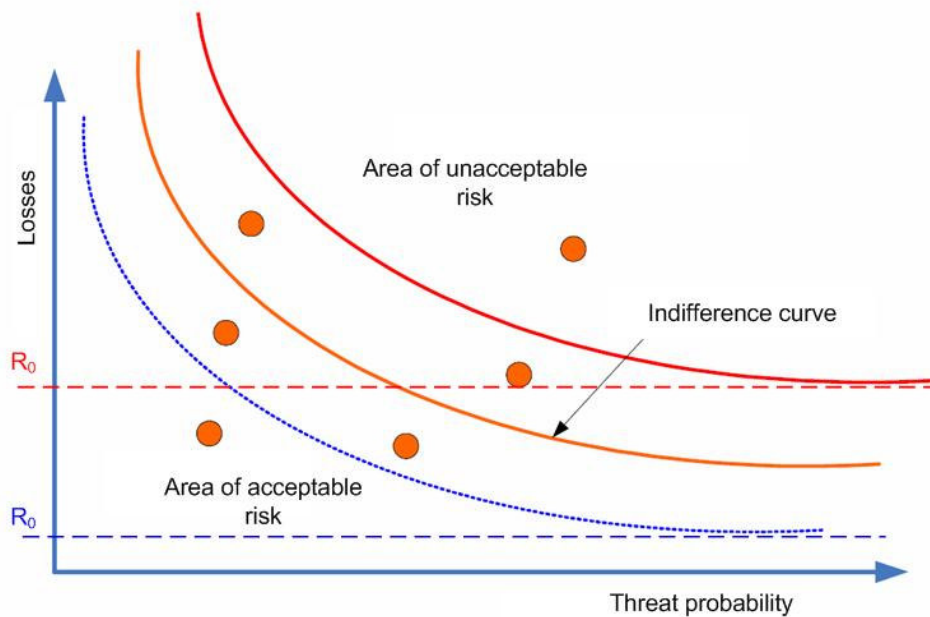


**Figure 2.** Reciprocal dependence between the level of risk and the required resources.

In every organization the decision how much risk is acceptable is a control body's duty. In general case the evaluated risk takes possible values from the curve, which represents the trade-off between the probability of occurrence and consequences (losses) of those risks, as it is shown on figure 3. The three curves separate different areas of risk and to switch between them is possible by means of risk management actions (which are proposed in the **Model**).

Different approaches, methods and technique [4, 6] could be used in performing the risk assessment. There is not one correct method for every situation, so for a specific task the appropriate mathematical instruments should be chosen, based on available type of collected data and user preferences. Calculated risk assessment in accordance to the identified threat sources can assist decision making for influence on risk. The final goal is to make decision which risks to oppose and to diminish. The risk assessment must take into consideration the sensitivity of the calculations done towards mistakes. The affinity to show optimism when making subjective risk assessment is another particularity that should be counted.

The application of quantitative methods to risk assessment could decrease the optimistic trend in assessments, as in some cases it can significantly influence the objectivity and accuracy. Under certain circumstances the establishment of crisis plans is needed in order to manage risks that are transformed into problems.



**Figure 3.** Threat probability versus losses and depicted areas of unacceptable (above the red curve) and acceptable (under the blue curve) risk.

### 2.5. Effectiveness Indicators

In the overall model of risk management the aim is to facilitate the decision-maker in such a way that the uncertainty to be decreased and the confidence for successful decision to be increased. The decrease of uncertainty and ambiguity is achieved through compiling more data concerning possible risky events (as regard to the goal), thus throwing light upon the desired end state. In order to achieve this, the steps given in the **Model** must be followed. For increasing the success confidence the risk residual is minimized, which means we aim at risk with higher confidence and predictability.

A very important moment in the risk assessment phase (based on which the management itself is been carried out) is the perception and understanding of the risk as a probabilistic variable. The risk is always calculated for a future moment and its value is the expected (estimated) value for this stochastic variable. If we use the comparison, which David Mc Kay makes in his book<sup>3</sup> on the information theory, measuring the risk has three different facets – one is calculation of the stochastic variable (risk by goal achievement), quite another is the value of the random variable, and third is the probability of this value to be true.

The risk, which is assessed, is the estimated value of the forecasted risk. It is calculated on the basis of expert estimates of the probability, frequency and consequences of every potential risky event (which could lead to a break or failure of

<sup>3</sup> MacKay, D. J. C., (2003) Information Theory, Inferences and Learning Algorithms, Cambridge University Press, Chapter 2, pp. 27.

the achievement of the goals). The bigger the confidence level of the estimated value is the smaller the residual risk is.

One of the main indicators for efficiency of the decision for prevention of crime is the cost (the value at which we will reach the desired decision). That's why most often the decision for a choice of course of action is given by a function of minimization of the costs.

The rest of the indicators for efficiency are non-contradiction, stability, feasibility and capability to be controlled, as well as precision (higher confidence). The final risk assessment based on the calculated risk is the risk level. The higher this level is the better and with more assurance we can accept, that the calculated risk will happen. In other words, besides that the risk assessment remains probabilistic, it gives extremely important information to managers and the decision makers, whether it is worth to accept a certain risk.

### **3. Risk Analysis for Criminality Prevention**

The aim of risk analysis is to improve the management in case of risk events and to assess the processes concerning prime cost, quality and time which is an extremely complicated task and it demands that the managers must have clear perception which parameter/s of the process are most important for the achievement of the organization's strategic aims [8, 9].

In order to reduce the risk different ways for dealing with the uncertainty are applied. One of them is transparency, which turned into a main weapon against hidden practices of service status abuse for deriving personal profit, as well as fight against criminality.

Another way to reduce the risk is presence of an appropriate strategy and an applicable methodology. The strategic security management regarding criminality prevention must be based on clear strategic vision for risk management and has to define activities<sup>5</sup> for corruption and criminality restriction.

Having well established methodology for risk management [9], as is the case in the United Kingdom, the elaboration of a national risk assessment from the government is done on the basis of this methodology and possibilities are suggested for taking activities and for crisis management in several phases: monitoring of the risk; planning within the frame of the available resources; use of primary capabilities and use of secondary capabilities.

#### ***3.1. Risk Assessment***

The main step in risk management process is the risk analysis. By analyzing all relationships and potential risky events an overarching model for management of the whole system is being established with regard to risk. The risk assessment is carried out on the basis of detailed specific methodology, through which the risk is measured,

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<sup>5</sup> As a consequence from risk analysis

depending on the identified values for the system and the probability of realization of threats, that are using the existing vulnerabilities. Every potential event, which carries negative consequences, can be regarded as a risk. Another risk exists – that of non-achievement of the goals settled in advance, which could lead to predictable and inevitable negative consequences.

Risk assessment as part of the analysis serves to give the best way to make sure that the full range of future conditions is examined (those that are likely, as well as those that are unlikely, but still possible). Risk cannot be spoken of as acceptable or not in isolation, but only in combination with the costs and benefits that are attendant to that risk.

According to the organization type a quantitative or qualitative approach is being selected [4] and the related methodology, which is desirable to be standardized. The probability of bringing harm through realization of threat is determined. In order to minimize the risk, at first the areas with unacceptably high risk are defined, after that the most effective means for protection are chosen and the corresponding residual levels of risk are evaluated against the acceptable ones. The main criteria for assessment include:

- Risk assessment criterion;
- Risk reduction criterion;
- Risk acceptance criterion;
- Required resources.

When making comparison between risks, the information about their prioritization is used. This information is obtained during the phase of risk analysis for making a decision for future actions [6], including: should special activities be undertaken for accepting, rejecting, mitigating or avoiding each of the evaluated risks, and defining priorities for risk processing (with the estimated levels of risks)

### ***3.2. Effective Management process***

In reality, all members of the institutional staff are involved in the risk management process. These are the managers, the executive staff, the suppliers and subcontractors. In fact, the risk management is a process, but not a static fact or set of rules and procedures. It begins from the very moment of taking a decision for the strategy of the development of the organization and estimate of that what processes will be performed. Key factors for effective risk management process include:

- The supreme management to be aware of the risks, related to the agreements, and to implement effective practices for management of these risks;
- To guarantee, that the agreements are reasonable from the risk point of view and that they are in compliance with the goals of the organization;
- Systematic assessment of the requirements, while defining the risk-based requirements;
- Implementation of effective control and risk identification;

- Carrying out of continuous monitoring for identification and assessment of the changes in risks against the primary identified situation;
- Implementation of procedures related to documentation, roles and responsibilities, mechanisms for strict accountability.

On the basis of objective, clear and dynamically generated schedule of risks we can prepare an action plan for diminishing and elimination of risks. Usually we begin with the most serious risks. In order to mitigate every risk from the list a clear scheme is used – either the probability to happen must be decreased, or the potential consequences, or both, if possible. It is important, when dealing with risks, to make a periodic assessment, as through the course of time some changes occur, either in the level of risk, or in the occurrence of new risks. For that reason especially useful are the software solutions, where automated reports are recorded in template formats and can be reviewed and analyzed very quickly [10].

When making assessment of different alternatives well elaborated criteria are used. The model for assessment of alternatives and decision making includes:

a) Choosing of preferable alternative. If the expert determines his preferences for mutually excluding each other alternatives through the utility function (or expected benefit and consequences from this alternative), then the most preferred is that with the highest added value.

b) Multi-criteria analysis – if there are fuzzy estimates (not crisp), the criterion for alternative selection is based on the game theory following the *max-min* rule. This means the choice of alternative with possibly the worst consequences to be better than the choice of alternative with possible the best consequences amongst the rest or equivalent to it. In order to minimize the risk, the fuzzy assessments are replaced by defined subjective probabilities on the basis of previous analysis and personal competence.

Throughout risk modeling and management, it is possible to be shown how the managerial attention is focused on different phases of the activity and/or the supply of services. For example, in activities related to choosing an outsourcing, the risks vary in accordance with the degree of meeting the defined requirements and technical capabilities of the applicants. The better defined and more detailed depiction of relations and responsibilities among the participants in the process serve for analysis of the risks and demonstrate where the risk management can be most effective. The value of risk analysis consist of, that it offers a powerful frame for comparison of the requirements with the capabilities and combination of different capabilities in order to meet them.

#### **4. Conclusion**

The effectiveness of risk management directly depends on the available automation of activities, on including motivated experts into the workgroups, on using well known techniques for analysis and applying objective assessment of identified risk factors in accordance with the goal. The most important element

remains the problem awareness, related to potential risks, their adequate analysis (through proposed techniques), as well as choosing a course of action informative decision.

The core importance of the implementation of risk management is in its high efficiency, which the institutions obtain due to it – against modest investments in risk management [7] they reach remarkable results. The experience shows, that one of the most expensive “pleasure” of management is the control and overcoming of crime, which was not controlled efficiently. Due to missed, non-identified risk, related to or directly doing to realized criminal activity. When such criminal activity is not assessed in the right way, there is no effective influence for its prevention. The risk manager’s role is like ICAR (wordplay, mythological Icarus wanted to reach the Sun):

↳ **Integrator** – who can unify the efforts and align them into the logical model;

↳ **Catalyst** – to make every participant consider the possible consequences and assist decision-making;

↳ **Architect** – to develop the frame of the whole process and to construct the risk management scheme;

↳ **Re-engineering** – to reuse and repeat the activities (with minimal efforts and without redundancy) for risk assessment and alternative choice in different time slots for a given preference.

The reaction to and countering potential criminal acts before they become real, one of the main principles of the national security policy, is the right direction for prevention, and it can be achieved with the instruments of the risk management. This is in the spirit of the principle for “proactive action and coordination of actions of the state institutions and organizations in accordance with their competence”<sup>6</sup>. Another important interest<sup>7</sup> is the prevention and countering the corruption and organized crime.

The laid down in the European Strategy<sup>8</sup> strengthening of Europe’s stability suggests an approach, that counters all threats and risks for security – for developing directions for identification and assessment of risks related to crime. The recommendation for development of the entire policy on risk management in the EU matters entirely for our country. Such a policy will have to bind the risk assessment with the decision making process. The biggest advantage from the risk assessment will be taken when implementing it in the overall process of strategic management of security.

The approval and implementation of methodology for risk management and its near term institutionalization in the governmental organizations will save significant amount of organizational energy and resources in the future. It will provide

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<sup>6</sup> In paragraph II of the National Security Strategy of Republic Bulgaria, State Gazette, №19, 8 March 2011, pp. 4.

<sup>7</sup> In paragraph III, ibidem, pp.5.

<sup>8</sup> The EU Internal Security Strategy in Action: Five steps towards a more secure Europe, Council Doc 22.11/2010

transparency and possibilities for real analytical support of the organizational processes and efforts for transformation.

### REFERENCES:

- [1]. Beck, U., *Risk Society, Towards a New Modernity*, originally published as 'Risikogesellschaft: auf dem Weg in eine andere Moderne', Suhrkamp Verlag, Frankfurt am Main, 1986, translated SAGE Pub. 2003.
- [2]. Department of Commerce. *Project Risk Management Guideline*. 2004.
- [3]. Giddens, A. (1997) BBC Reith Lecture, [http://news.bbc.co.uk/hi/english/static/events/reith\\_99/](http://news.bbc.co.uk/hi/english/static/events/reith_99/), accessed 24 Feb. 2011.
- [4]. ISO/IEC 31010: 2009, Risk management – Risk assessment techniques.
- [5]. Morgenthau, H. J., *Politics Among Nations: The Struggle for Power and Peace*, Fifth Edition, New York: Alfred A. Knopf, pp. 4-15, 1978.
- [6]. Georgiev, V., Risk Management as an Instrument to the Program Management. Sofia, *Military Journal*, (in Bulgarian) 2005.
- [7]. Slatinski, N., Lecture 3 from „Four lectures” series - „Introduction to Risk Management”, (in Bulgarian) <http://nslatinski.org/?q=bg/node/297>, accessed Oct. 2010.
- [8]. Stoykov, M., *Emergency Management Integrated System: Architectural Approach*, Softrade Pub. (in Bulgarian), ISBN-10:954-334-039-0, 2006.
- [9]. Stoykov, M., National Security Transformation Paradigm, *Military Journal* № 2, (in Bulgarian) pp. 61-83, 2008.
- [10]. Tagarev, T., Defence Minded Enterprise Development with TeleLogic Products, *CIO* № 7, (in Bulgarian) 2006.
- [11]. Shalamanov, V., Model of Effective Defence Management – the Role of Operational Analysis and Integral Use of Civilian and Military Expertise, Annual Report (in Bulgarian) Feb. 2009.
- [12]. Shalamanov, V., T. Tagarev, *Information Aspects of the Security*, Porcon Pub., Sofia (in Bulgarian) 1996.

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