

SOFT TARGET ASSESSMENT SOFTWARE

Lucia Mrazkova Duricova^(a), Roman Jašek^(b), Jan Mrazek^(c), Martin Hromada^(d)

^{(a),(b),(c),(d)} Faculty of Applied informatics, Tomas Bata University in Zlin, Nad Stranemi 4511, 76005, Zlin Czech Republic

^(a)lmrazkova@utb.cz, ^(b)jasek@utb.cz, ^(c)jmrazek@utb.cz, ^(d)hromada@utb.cz

ABSTRACT

The soft targets and crowded places are closely related to the risk of attack to the group of people. These places are very specific because the moving in the soft targets is not organized. That's mean these places have open and public access. The attack in the soft targets (attack on the soft targets) can have a significant impact on the population and life of the people. The main aim of the proposed software is to analyze the features of the object. According to the analyses, we can define the corrective action, which can have a significant impact on the security situation in the object.

Keywords: soft targets, assessment, software, methodology

1. INTRODUCTION

The definition of soft targets can have some differences in the Czech Republic and abroad. We can see some differences in the next part of the paper.

Soft Targets and Crowded Places (ST-CPs) are locations that are easily accessible to large numbers of people and that have limited security or protective measures in place making them vulnerable to attack. ST-CPs can include, but are not limited to, schools, sports venues, transportation systems or hubs, shopping venues, bars and restaurants, hotels, places of worship, tourist attractions, theaters, and civic spaces. ST-CPs do not have to be buildings and can include open spaces such as parks and pedestrian malls. ST-CPs will not necessarily be crowded at all times – crowd densities may vary between day and night, by season, and may be temporary, as in the case of sporting events, festivals, or other special events. (U.S. Department of Homeland Security 2018)

Attacks against soft targets have a powerful effect on the psyche of the populace. Modern terrorist groups and actors had redrawn the battlefield lines, and places where civilians once felt secure have been pulled into the war zone. (Ministry of the Interior Czech Republic 2016)

Soft targets are places with a large concentration of the people and the low level of security measures against the violent attacks. (Hesterman 2015)

We used our definition to this research: *“The soft targets are objects (buildings, areas, open spaces) in which a large number of the visitors are located. These objects don't have integrated the special security and safety measures which can:*

- *defend the violent attack on the lives of the visitors,*
- *positively increase the reactions to the incident,*
- *protect the lives of the visitors.*

The violent attack can cause the death or injury of the person or the more persons who are in the object or in the closed area of the objects.”

In this paper, we describe the methodology of the assessment of the soft targets software tool. In section 1, we describe the introduction to this paper. In section 2, we analysed the last attacks on the civilians in 2018. Section 3 describes the methodology of the software. The case study (shopping centres and schools) is described in section 4. Finally, we summarize the conclusion in the last section 5.

2. THE ATTACKS ON THE CIVILIANS IN THE SOFT TARGETS

The attacks on soft targets are very popular in the last years. The reason for the attacks on the soft targets is that the soft targets are full of unprotected civilians and these places are called “free gun zones”. (Hesterman 2015)

In Figure 1, you can see the timeline of the attacks in the 2018.

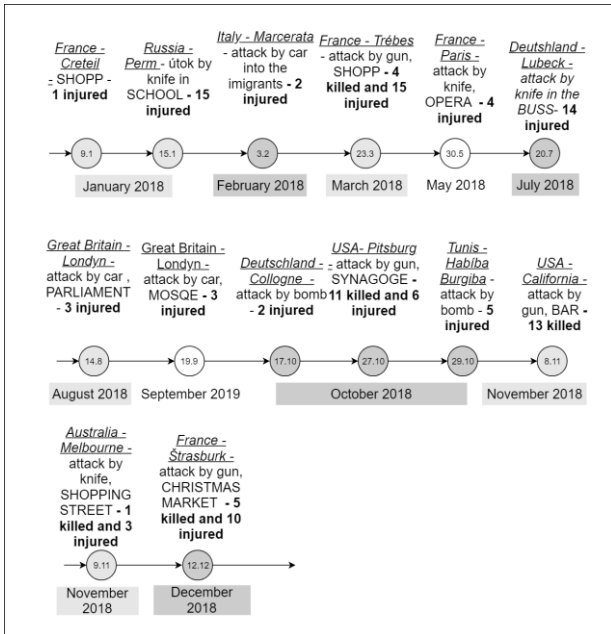


Figure 1: The analysis of the last attacks in 2018.

In Figure 1, we can see the number of killed civilians. The situation in Figure 1 describes the places which can be attacked. According to the (Hesterman 2015), can be described the similar motivations and goals that cross all brands of the terrorist and criminal group to attack the soft targets:

- Easier, cheaper, and short planning cycle. (The attack the soft targets is easier, cheaper and short that the attack to the military objects. The effect on the population has significant impact)
- Increased likelihood of success.
- Credibility. (Status in the group.)
- Recruiting value.
- Flexing muscle.
- Compensating for weakness.
- As a last gasp.
- Backed into the corner.
- Test a new strategy, tactic, or weapon.
- Fund-raising.
- Quickly damage a market.
- Delegitimize a government.
- Cause political instability.
- Make a country look weak internationally.
- To attain global media coverage.
- A target-rich environment.
- Psychological fear.
- Make a domestic issue international.

[2]

In 2019 (21.4.2019) exposes 6 bombs in Sri Lanka. This attack can be called as the biggest attack in 2019 (up to now). This attack caused 42 deaths and 280 injured civilians.

In this part of the paper was described the attacks on the soft targets. We can constant that this part of the research still needs to innovate and develop the next approaches to solving the situation.

3. THE METHODOLOGY OF THE SOFTWARE

The software logic is based on the analyses of the features of the objects according to the questions and answers. Each of the answers has defined the level of security. According to the threats, we can define the weight of the criteria and weight of the answer. The software can help us with the comparison of the objects, with the definition the corrective actions and simulations too. In Figure 2, we can see the process of the methodology of the proposed software tool. This process is the basic main process according to them we can analyze the soft targets and situation in soft targets.

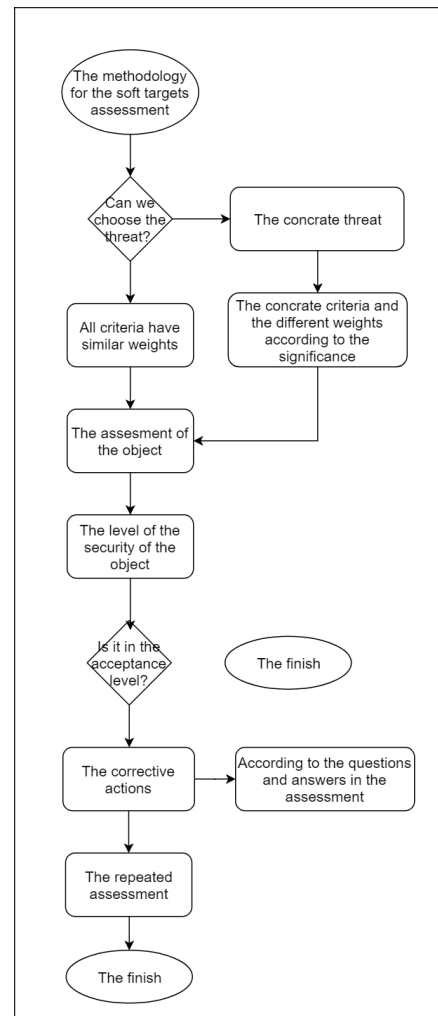


Figure 2: The process of the proposed methodology.

The process in Figure 2 is static. We need to analyze the objects in the dynamic part of the software. The state of the object (situations in the building or on the event) can be changed in time. We need to monitor the situation in these objects. The dynamic part of the proposed software can change the situation in the object according to the changes in the closed area and closed locations.

3.1. The definition of the locality security coefficients

The locality is identified by the closed places and threatens of these places. The next parameter which can have a significant impact on the security of the locality is the city. The population in the city is a very important factor. The population in the city can be changed in time (planning the vent in the city).

In figure 3 we can see the locality coefficients in Prague (the capital city the Czech Republic). The value 1 represents the most unsafety situation. We can see that the value 1 represents the airport for example.

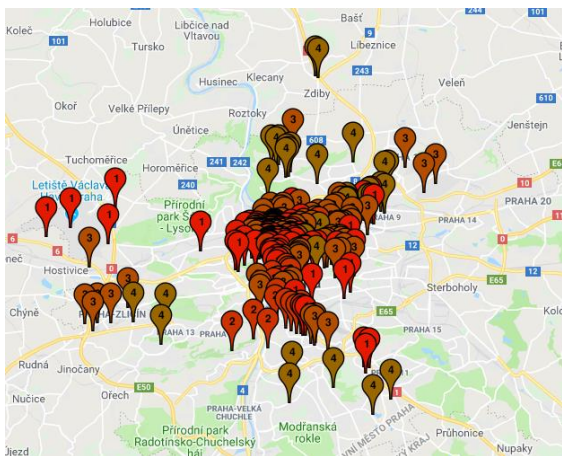


Figure 3: The example of the locality coefficients.

As we can see in figure the situation in the capital city is better when we evaluated the closed places. The center of the city has defined the most unsafety situations because the probability of the attacks and the number of visitors is higher than out of the city center.

4. THE CASE STUDY

This part of the paper is oriented to the case study of the proposed methodology for the assessment of the soft targets. The first part of this case study analyses the shopping centers. The second part of the case study is oriented to the results of the analysis of the school's objects. The best security situation is defined by the numerical value of 10. On the other hand, the value 0 or 1 represents the worst security situation in the object. We didn't use to the specific analyses (no with the definition of the threat).

4.1. The shopping centers case study

The objects in this case study have similar localization. All of these objects are in the Czech Republic. The locality (city) of these objects is similar to the criminality index.

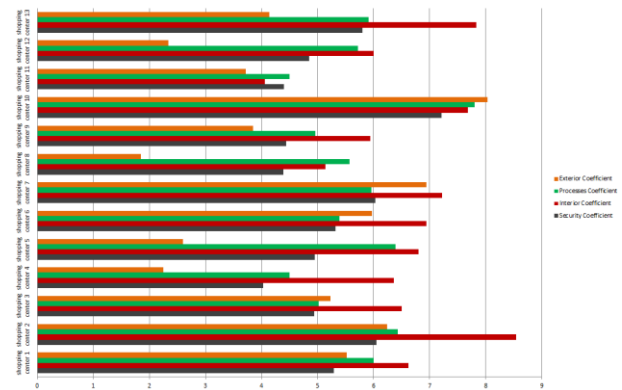


Figure 4: The case study – shopping centers.

As we can see in Figure 4, we analyzed 13 objects (shopping centers). The data from the graph are in table 1.

Table 1: The data of the case study – shopping centers.

	shopping center 1	shopping center 2	shopping center 3	shopping center 4	shopping center 5	shopping center 6
Exterior Coefficient	5,52	6,24	5,23	2,25	2,6	5,97
Processes Coefficient	6	6,43	5,02	4,5	6,39	5,39
Interior Coefficient	6,62	8,54	6,5	6,36	6,8	6,94
Security Coefficient	5,29	6,05	4,94	4,03	4,95	5,32

	shopping center 7	shopping center 8	shopping center 9	shopping center 10	shopping center 11	shopping center 12	shopping center 13
Exterior Coefficient	6,94	1,85	3,85	8,03	3,72	2,34	4,14
Processes Coefficient	5,96	5,57	4,96	7,8	4,5	5,72	5,91
Interior Coefficient	7,22	5,14	5,94	7,68	4,06	6	7,83
Security Coefficient	6,03	4,39	4,44	7,21	4,4	4,85	5,8

As you can see in Figure 4 and table 1, the shopping center 10 has calculated the best security situation. On the other hand, the worst security situation is in the shopping center 4. The shopping center 10 has calculated the whole security coefficient of 7.21. The shopping center 4 has calculated the whole security coefficient of 4.03.

The city of these two objects is the same. The localization of these two objects is different. The object 4 is in the middle of the center. The closed area of the shopping center 4 is more unsafe as the shopping center 10. The object 4 is in the same areal with the Rock concert hall and the gas station. On the other hand, object 10 has a bigger area. The object 10 has more than 1 enter/ exit. The object 1 has only 1 enter/ exit. The entrance to the parking in the object 4 is managed by the barriers. On the other hand, the object 10 doesn't have managed enter/exit to the parking. These objects have only open parking. The arithmetic average of this group of the case study (shopping centers) is 5.21.

4.2. The school objects case study

This case study analysis the primary schools. These objects are important because the primary users of these

objects are children. All of these objects are in the same region.

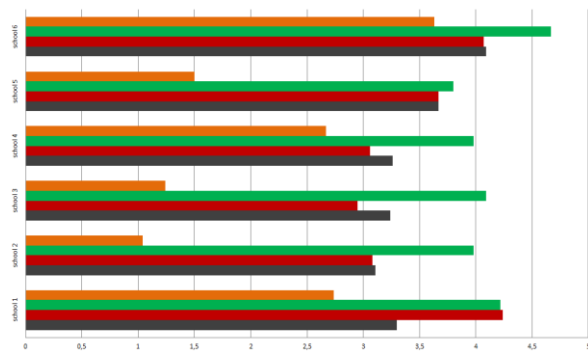


Figure 5: The case study – schools.

We analyzed 6 schools as we can see in Figure 5. The data from the graph are in table 2.

Table 2: The data of the case study – schools.

	school1	school2	school3	school4	school5	school6
Exterior Coefficient	2,74	1,04	1,24	2,67	1,5	3,63
Processes Coefficient	4,22	3,98	4,09	3,98	3,8	4,67
Interior Coefficient	4,24	3,08	2,95	3,06	3,67	4,07
Security Coefficient	3,3	3,11	3,24	3,26	3,67	4,09

The schools 6 has the best security situation. On the other hand, school 2 has the worst security situation. The object 6 has value 4.09 and object 2 has the value of the security coefficient 3.11. The object 6 has two enters and exits. The object 6 has a more secure closed area than object 2. Object 2 has only 1 enter and exit. The arithmetic average of this group of the case study is 3.45.

Finally, we can compare these two groups of objects. The shopping centers have more users than in primary schools. The risk of these objects can be higher. On the other hand in the category (schools) are popular users (children). The level of security measures is higher in shopping centers. The shopping centers have installed the security devices (cameras) and the security workers are presented in the object during the whole open hours. The number of users is different. The primary schools are visited by the children, but the number of children is under 100 children. On the other hand, the shopping centers are visited by all types of people for the whole day. The number of visitors is under 1000 persons per day.

5. CONCLUSION

According to the previous part of the paper, we can constant the security coefficients answer to reality. The schools have not integrated so secure and safe measures then the shopping centers. The schools are non-profit organizations that don't have so the financial resources to the security devices as the shopping centers. According to the statistics data (HESTERMAN, 2016), the more attacks are in the schools. This statistic is done mostly in the USA. This statistic considers to the statistic criminal acts (no only terrorist attacks).

According to the results of the statistic, we can constant, that this part of the verification of the proposed methodology was successful. We can say that the results answer to reality. In the next part of the research, we need to develop the dynamical part of the proposed software. The dynamical part of the software will simulate the progress of the security coefficients in the object. According to the simulations we can see which objects are threatened by the planning event in the closed area.

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AUTHORS BIOGRAPHY

Lucia Mrzaková Duricová is a researcher at Tomas Bata University in Zlin from 2015. She is coworking on the projects of the security research for the Ministry of the Interior from 2016.