**Technical particulars of the organization, course and security
of 2020 elections to AS FSV UK**

(pursuant to Article 1, paragraph 2 of the AS FSV UK Electoral Code)

Electronic elections to the AS FSV UK will take place within FSV UK in 2020.

The process of the elections will be overlooked by the Electoral Commission. Technical support is to be provided by the Secretary of the faculty in cooperation with by him delegated employees of the Dean's office. The electoral app and its administration will be ensured based on the license agreement between ozpr s.r.o. and the Head of FSV UK.

The Head of the faculty, in cooperation with the external subject ozpr s.r.o., prepared its own solution for the arrangement of the electronic elections to the AS FSV UK for autumn 2020. *Spotsu* system, based on the usage of QR codes and mobile phones, is to be used as the base of the elections.

Spotsu was developed directly by the external subject. It is a web application of the CakePHP platform, which is partially using Java script on db MySQL. The potential user can either use a computer or a mobile phone. The communication with the spotsuapp server is provided by the HTTPS protocol. All servers are situated in the Czech Republic. *Spotsu* is also secured by multi-stage logging on the level of the operation system.

The electoral system is based on the distribution of individual links for vouchers through faculty mailing list. Distribution will be ensured by the SmartEmailing tool. With the link in the email, the voter will have a right to pick up a randomly allocated ballot during the elections and will have 15 minutes to submit his/her vote. The ballot can be saved by the voter for possible later validation after the end of the elections.

The authentication and authorization will be ensured by the faculty email account, the individual link for the voucher and the individual randomly allocated ballot.

All transparency, anonymity and security requirements are to be ensured both, by the system itself, and by the processor. The emphasis concerning the processor is put on the division of roles and powers (SoD – Segregation of Duties), while all subjects taking part in the process have clearly divided information to which they have access.

In line with the Electoral code, in connection to the accessibility of the mobile app and in favor of reducing the IT/IS risks will the election only take place for two days, specifically from 9:00 am of the first election day, until 6:00 pm of the second election day.

Technical and organizational procedure:

1. The Secretary of the faculty will provide the list of all authorized voters and will perform the data quality check no later than 10 days before the first election day. The Secretary will then pass the list to the President of the Academic Senate, who will hand the list in to the Electoral Commission.
   a. The list of all students, who are members of the academic community of the faculty is to be generated from the SIS in cooperation with the Student Department.
   b. The list of all academic employees of the faculty is to be generated from the EGJE app in cooperation with the Personalistic Department. The actualization of the EGJE list will be provided by the WHOIS app before the generation of the final list.
2. After the confirmation of the list of voters by the Electoral Commission, the Secretary will be informed and will pass the list to the Department of External Relations (DER), which will send out the information about elections to all authorized voters via SmartEmailing. All voters will also receive a link for the election website and the elections app instructions in this email. This

information is to be distributed no later than 9 days before the first election day from the dedicated email address volby.as@fsv.cuni.cz. The distribution list consists of:

   a. Email: "UKČO"&"@fsv.cuni.cz" (the form of the email address differs for CERGE-EI voters and will be collected earlier in the process as it is not available via FSV UK systems)
   b. Name.

3. The Head of the Electoral Commission will give the Secretary of the faculty the instruct after the publication of candidate charters, and he will instruct the external administrator of the elections app to create the elections instance, that is the number of voters and the list of candidates. The administrator will also generate the list of vouchers and ballots well in advance.

4. The administrator of the election app will pass the list of vouchers to the Electoral Commission and the Secretary no later than 3 days before the first election day.

5. The Secretary of the faculty will prepare the distribution list of vouchers based on the lists of authorized voters which needs to be approved by the Electoral Commission. The list of voters will be then passed to the DER. The DER will ensure the distribution of vouchers via SmartEmailing from the email address volby.as@fsv.cuni.cz. This will be done no later than 2 days before the first election day. This email will also include the elections website and the elections app instructions.

6. Until the end of the elections, the Secretary of the faculty ensures a daily update of the list of authorized voters and informs the Head of the Electoral Commission about any potential changes. The Head of the Electoral Commission then instructs the Secretary to either deactivate the voucher, in case that it was distributed to a person who in the meantime ceased to be an authorized voter, or to distribute a new voucher to a person who on contrary became an authorized voter. The deactivation is only possible with an unused voucher. (The voucher can only be used during the elections.)

7. The Head of the Electoral Commission will instruct the Secretary of the faculty even in case, that an authorized voter request a new voucher, for example in case that he/she deleted the original one. In this scenario, the original voucher is to be deactivated and the voter receives a new one.

8. On the first election day, the Secretary of the faculty will create an updated list of authorized voters in favor of detecting any potential changes in the list. This updated list will be then approved by the Electoral Commission. The Electoral Commission will pass the information to the Secretary, who will instruct the DER to distribute a reminder of the beginning of the elections via SmartEmailing.

9. The Electoral Commission ensures user support during the whole time of the elections. The Electoral Commission can also ask for the cooperation of the Secretary of the faculty and the external administrator, always via email except urgent matters when it can approach telephonically.

10. Immediately after the end of the elections, the administrator delivers the results to the Electoral Commission. The results consist of detailed underlying data (the list of vouchers and for whose benefit they were submitted) and aggregated data (the final number of votes for each candidate). Lists of used vouchers under particular institutes will be created in cooperation with the Secretary of the faculty. Besides the results of the elections will the administrator provide information about the usage of vouchers to the Electoral Commission, based on which the Commission then searches for potential suspicious data. In case of the detection of the suspicious data then the Electoral Commission plans the possibility of further analysis in the database in cooperation with the administrator. The evaluation of any suspicious data is fully in hands of the Electoral Commission.

11. After the announcement of the elections results, the administrator in cooperation with the Electoral Commission and the Head of the faculty ensures a possibility of the recheck of their votes for all voters. The form of this process is fully in hands of the Electoral Commission. (One

of the potential forms is the usage of faculty smartphone, which would according to QR code from the voucher show to which candidate's benefit was the particular voucher submitted. Another possibility would then be the disclosure of the complete list of submitted votes, where voters could find their vote based on the code from the voucher.)

Information about the testing

The election app was continuously tested during its creation by a working group appointed with the testing. Two more tests were made in cooperation with tens of users after the finalization of the app:

1. The testing with THP employees of the Dean's office was run between the days of September 25 and September 29, 2020. This test included the export of lists of faculty employees and students and a check for duplicates. In total, 90 vouchers were distributed and 44 out of these vouchers were used in the process. That means that 44 Dean's office employees participated in the testing.
2. The testing with the members of student association and some employees of the faculty was run between the days of October 1 and October 5, 2020. In total, 123 vouchers were distributed and 71 out of these vouchers were used in the process. That means that 71 student associations members and faculty employees participated in the testing. The feedback was submitted by 23 users.

The feedbacks collected during the tests firstly drew attention to one inoperable link. Other feedback was rather positive. The main comments concerned:

- The possibility of making the number of remaining votes for the voter to submit visible. This will not be implemented as the server doesn't receive this information in favor of security;
- The order of candidates, which will be in hands of the Electoral Commission;
- The link for the elections' website and candidates' profiles, which will be provided and made fully functional as soon as the website is finished;
- Long texts in the instructions, which were replenished based on previous requirements;
- Etc.

The vast majority of the 23 explicit feedbacks approved, that the system is clear and understandable.

Conclusion of the testing: The election app is prepared for deployment.

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