



Strasbourg, 17 June 2021

GT-DT(2021)2- Informal consultation

**EUROPEAN COMMITTEE ON DEMOCRACY AND GOVERNANCE
(CDDG)**

**WORKING GROUP ON DEMOCRACY AND TECHNOLOGY
(GT-DT)**

REPORT OF THE INFORMAL CONSULTATION

VIDEOCONFERENCE MEETING

28 May 2021

1. Opening of the meeting and adoption of the agenda

The Chair, Mr Almir Šahović (Bosnia and Herzegovina), welcomed the members of the Working Group to the informal meeting. The list of participants can be found in Appendix I. The agenda was adopted as it appears in Appendix II.

2. Draft Committee of Ministers' guidelines on the use of new technologies in the different stages of the electoral process

The three expert consultants (Ms Ardita Maurer, University of Zurich, Zentrum für Demokratie Aarau, Gimel, Switzerland; Mr Robert Krimmer, ERA-Chair Full Professorship of e-Governance, Skytte Institute, University of Tartu, Estonia; and Ms Melanie Volkamer, Karlsruhe Institute of Technology, Germany) presented the draft guidelines which currently consisted of a preamble and introduction, 12 principles and a glossary. The presentation can be found in Appendix III.

The experts highlighted that the main goal of the guidelines was to answer the question how information and communication technologies (ICT) could best support the electoral process in light of transparency and accountability, while ensuring integrity of the electoral process and enhancing citizen's trust.

The experts further pointed out that e-voting, and specific questions related to e-voting as such, was outside of the scope of the guidelines, as this aspect was covered by other Council of Europe instruments.

Overall, members welcomed the draft guidelines, stressing the benefits of having an interdisciplinary team of experts to develop them, and appreciating the technological-neutral approach taken. Members also commented positively on the participation of Election Management Bodies from numerous member States in the meeting.

The discussion centred around the following issues: accessibility and usability, security, transparency and balancing of principles, responsibility as well as capacity building.

Members stressed that **accessibility** and usability were key and welcomed that the guidelines had the end user in mind.

With regards to the issue of **security**, several members emphasised the importance of taking a security by design approach. Furthermore, questions related to open source, handling of additional data loads, logging and backup systems as well as contingency plans were addressed. Some members suggested that cybersecurity should be dealt with as a separate principle.

Members welcomed that the guidelines put **transparency** at the heart. However, more clarification was needed with regards to how to strike a balance when different principles conflicted (e.g. transparency v. data protection; transparency v. security). So far, the experts had not suggested specific criteria, as in their view, this might be too far reaching.

Members stressed that the guidelines should reflect the fact that not all elections were organised and managed at the national level, as in many member States the local level was in charge. The experts clarified that the term member State in the guidelines referred to the authority in charge, be it on the local, regional or central level.

Some members highlighted the need for **capacity building** of civil servants in the field of elections, as it was hard to find personnel with relevant technological competences and skills. The experts pointed out that the competences an authority needed, was context specific and could not be answered generically. The UK delegation shared a link to [teaching public service in the digital age](#) as an example.

For Principle 5, it was suggested to delete the word 'noticeable' before the word 'interruption', as all interruption would be relevant. With regards to the term 'force majeure', members felt that this should be further clarified. In this context, the Venice Commission referred to the documents listed in Appendix IV.

The Secretariat pointed out that the expectation of the Committee of Ministers with regards to task ii). was to receive guidelines which were comprehensive and applicable to all member States and focussed on general principles, definitions and applications, not going into too much detail. It was agreed that the wording of the guidelines would need to be revised and adopted to wording appropriate for guidelines, in particular using the term 'should' instead of 'shall'.

Members also expressed interest in a supplementary document showcasing best practice examples to complement the guidelines. The Secretariat pointed out that a collection or handbook with examples could be envisaged, depending on the availability of time and resources. However, priority should be given to finalising the guidelines, as the supplementary document was not a deliverable under the terms of reference and would not be submitted to the Committee of Ministers.

3. Conclusions

It was agreed that comments and feedback should be sent in writing to the Secretariat which would coordinate with the experts. A restricted webspace would be set up in due course to allow collaboration. Working Group members as well as participants would receive an invitation once the space was set up. The guidelines would be further developed in writing with a view to present the final draft for approval at the next meeting of the working group, and subsequently submit the text for adoption at the second CDDG plenary meeting on 29-30 November 2021.

The Secretariat clarified that before guidelines were submitted to the Committee of Ministers, the legal office would review the text to ensure consistency with Council of Europe language.

Dan Popescu announced the departure of Sonia Sirtori, who was taking on a new role at the Political Affairs Committee of the Parliamentary Assembly. In the meantime, the work of the CDDG would be ensured by himself, Christopher Speckbacher, Judith Orland and Isabelle Etter.

4. Date and place of next meeting

The next meeting was scheduled for the 24 September 2021, modalities to be confirmed.

APPENDIX I

LIST OF PARTICIPANTS

Members of the Working group / Membres du groupe de travail

CHAIR / PRESIDENT

Ambassador Almir ŠAHOVIĆ, Ambassador of Bosnia and Herzegovina to the Netherlands, Ministry of Foreign Affairs of Bosnia and Herzegovina, Sarajevo

AUSTRIA / AUTRICHE

Mr Gregor WENDA, Deputy Head of Electoral Affairs Department, Directorate General of Legal Affairs, Federal Ministry of the Interior, Vienna

FINLAND / FINLANDE

Mr Markku MÖLLÄRI, Ministerial adviser, Department for Local Affairs and Regional Administration, Ministry of Finance, Helsinki

GREECE / GRECE

Mr Georgios CHRYSAFIS, Directorate of Organising and Functioning of Local Government, Ministry of the Interior, Athens

Ms Vasiliki MASOURA, Expert, Directorate of Organisation and Functioning of Local Government

Mr Nikolaos DIKAROS, Head of the Department of Design and Development of Information Systems, Directorate of E-Government

Ms Elli STILIANIDI, Expert, Independent Department of International and European Relations

ITALY / ITALIE

Mr Francesco GIUSTINO, Presidenza del Consiglio dei Ministri, Ufficio Attività Internazionali, Roma

NETHERLANDS / PAYS-BAS

Ms Amber MECHELSE, Senior Policy Officer Democracy, Democracy Department, Democracy and Governance Division, Ministry of the Interior and Kingdom Relations, The Hague

UNITED KINGDOM / ROYAUME-UNI

Mr Paul ROWSELL, Head of Governance Reform and Democracy Unit, Ministry of Housing, Communities and Local Government, London

Mr Gurpal CHEEMA, Policy Adviser, Governance Reform and Democracy Unit, Ministry of Housing, Communities and Local Government, London

Election management bodies / Organes d'administration des élections**ALBANIA / ALBANIE**

Mr Eugen DUSHALLARI, e-Identification Project Manager of the Albanian Central Election Commission

ARMENIA / ARMENIE

Mr Armen SMBATYAN, Secretary, Central Electoral Commission of Armenia

BELGIUM / BELGIQUE

Mme Marlies JASPERS, Service Elections

BOSNIA AND HERZEGOVINA / BOSNIE-HERZEGOVINE

Mr Goran MIŠKOVIĆ, Secretary General, Central Election Commission

CROATIA / CROATIE

Mrs Ivana BELEC, Member of the State Electoral Commission of the Republic of Croatia

CZECH REPUBLIC / REPUBLIQUE TCHEQUE

Ms Patricie SOKOLOVÁ, The Department of elections, Ministry of the Interior of the Czech Republic

ESTONIA / ESTONIE

Mr Priit VINKEL, Consultant to the Electoral Office, State Electoral Office

FINLAND / FINLANDE

Ms Heini HUOTARINEN, Ministerial Adviser, Election Management Body (EMB), Ministry of Justice

GEORGIA / GEORGIE

Ms ZHVANIA, CEC Chairperson

Ms Kristina TOLORDOVA

GREECE / GRECE

Mr Ioannis, PARASKEVAS, Head of the Department of Data Management and Interoperability

Ms Angeliki BAROUTA, Head of the Department of Elections and Political Parties of the Directorate of Elections

Mr Kosmas CHATZIVASILOGLOU, expert at the Department of Elections and Political Parties of the Directorate of Elections

HUNGARY / HONGRIE

Mr Attila PÉTERI, Election expert, National Election Office

ITALY / ITALIE

Mr Angelo CIANCIOSI, Centre for Studies on Privacy and New Technologies

Ms Costanza POLLINI, Centre for Studies on Privacy and New Technologies

LATVIA / LETTONIE

Mr Ritvars EGLĀJS, Secretary of the CEC

Mr Arvīds BRĀĻS, Head of IT

LITHUANIA / LITUANIE

Ms Kristina IVANAUSKAITĖ-PETTINARI, Head of Training and Communication Unit

Mr Darius GAIŽAUSKAS

LUXEMBOURG

Ms Anne GREIVELDINGER, Conseiller de Gouvernement, Ministère d'Etat, Service Juridique

Ms Mariza GUERREIRO VICTORIA, Conseiller, Ministère de l'Intérieur, Direction des affaires communales

REPUBLIC OF MOLDOVA / REPUBLIQUE DE MOLDOVA

Mr Alexandru BALMOS, Chief of the Information Technologies and Voters Lists Management Division

POLAND / POLOGNE

Ms Magda SADLAK, National Institute of Local Government

PORTUGAL

Mr João ALMEIDA, Secrétaire de la Commission, Comissão Nacional de Eleições

SAN MARINO / SAINT-MARIN

Ms Carlotta ANTONELLI, National Expert

Mr Davide BARTOLINI, IT Expert of the Office of Civil Status, Demographic and Electoral Services

SERBIA / SERBIE

Ms Dara GRAVARA STOJANOVIĆ, Ministry of Public Administration and Local Self-Government,

SLOVENIA / SLOVENIE

Ms Helena KAVČIČ

SLOVAK REPUBLIC / REPUBLIQUE SLOVAQUE

Mr Martin GAJDOŠ, General State Advisor, Department of Elections, Referendum and Political Parties, Section of Public Administration, Bratislava

SPAIN / ESPAGNE

Ms Ana Cristina LÓPEZ LÓPEZ, Joint Deputy Director General of European and International Relations, General Secratry of Territorial Coordination
Ministry of Territorial Policy and Civil Service, MADRID

Ms Vanessa SÁNCHEZ, Technical Advisor. Directorate General of Internal Policy and Electoral Processes, Directorate General of Internal Policy. Ministry of the Interior, MADRID

SWEDEN / SUEDE

Mr Carl-Niclas ODENBRING, Swedish Election Authority

SWITZERLAND / SUISSE

Mr Beat KUONI, Chancellerie Fédérale

Mr Oliver SPYCHER, Chancellerie Fédérale

Mr Julien FIECHTER

UKRAINE

Mr Sergiy POSTIVYI, CEC member

UNITED KINGDOM / ROYAUME-UNI

Mr Daniel SCHLAPPA, Head of Policy Team, Defending Democracy, Elections Division, Cabinet Office, London

Mr Guy DAWS, Cabinet Office, London

Ms Hannah SHAW, Cabinet Office, London

PARTICIPANTS / PARTICIPANTS**CONFERENCE OF INGOS OF THE COUNCIL OF EUROPE / CONFERENCE DES OING DU CONSEIL DE L'EUROPE**

M. Didier SCHRETTTER, Representative of the INGOS at CDMSI and CAHAI

CONGRESS OF LOCAL AND REGIONAL AUTHORITIES OF THE COUNCIL OF EUROPE / CONGRES DES POUVOIRS LOCAUX ET REGIONAUX DU CONSEIL DE L'EUROPE

Mr Roman CHLAPAK, Governance Committee / Commission de la Gouvernance

Mr Adam DRNOVSKY, Co-Secretary of the Governance Committee / Co-Secrétaire de la Commission de la gouvernance

RAPPORTEUR ON DEMOCRACY AND TECHNOLOGY / RAPPORTEUR SUR LA DÉMOCRATIE ET LA TECHNOLOGIE

Mr Peter ANDRE, Senior Expert for Legal Affairs, Ministry of Interior, Wien, Austria

EXPERT-CONSULTANTS / CONSULTANT-EXPERTS

Ms Ardita DRIZA MAURER, Juriste, LI.M., Consultante indépendante, Droits politiques et nouvelles technologies de vote, Suisse

Mr Robert KRIMMER, ERA-Chair Full Professorship of e-Governance, Skytte Institute, University of Tartu, Estonia

Ms Melanie VOLKAMER, Karlsruhe Institute of Technology, Germany

SECRETARIAT

Ms Sonia SIRTORI, Head of the Democratic Governance Division / Cheffe de la Division de la gouvernance démocratique – Secretary of the CDDG / Secrétaire du CDDG - Directorate of Human Dignity, Equality and Governance / Direction de la dignité humaine, de l'égalité et de la gouvernance, Directorate General of Democracy / Direction générale de la démocratie

Ms Judith ORLAND, Democratic Governance Division / Division de la gouvernance démocratique – Directorate of Human Dignity, Equality and Governance / Direction de la dignité humaine, de l'égalité et de la gouvernance, Directorate General of Democracy / Direction générale de la démocratie

Ms Isabelle ETTER - Assistant / Assistante

Other Secretariat participating in the meeting / Autre Secrétariat participant à la réunion

Mr Daniel POPESCU, Head of Democracy and Governance Department / Chef du Service de la démocratie et de la gouvernance – Directorate of Human Dignity, Equality and Governance / Direction de la dignité humaine, de l'égalité et de la gouvernance - Directorate General of Democracy / Direction générale de la démocratie

Mr Gaël MARTIN-MICALLEF, Division of Elections and Political Parties – Venice Commission

Interpreters / Interprètes

Ms Clarissa WORSDALE
Ms Rémy JAIN

APPENDIX II**AGENDA****1. Opening of the meeting**

Welcome by the Chair of the working group

Presentation by the Secretariat

2. Draft Committee of Ministers' guidelines on the use of new technologies in the different stages of the electoral process

- General presentation of the draft guidelines by Ms Ardita Maurer, University of Zurich, Zentrum für Demokratie Aarau, Switzerland
- Presentation of the specific guidelines by:
 - Ms Melanie Volkamer, Karlsruhe Institute of Technology, Germany
 - Mr Robert Krimmer, ERA-Chair Full Professorship of e-Governance, Skytte Institute, University of Tartu, Estonia
 - Ms Ardita Driza Maurer, University of Zurich, Zentrum für Demokratie Aarau, Switzerland

Questions and answers

Contributions by the participants

[GT-DT(2021)1- Informal consultation + Addendum]

3. Next steps

Presentation by the Secretariat

4. Conclusions

APPENDIX III

PRESENTATION

What have we done so far?

- Preliminary study “New technologies in the electoral cycle. Guidance from the CoE”
- Questionnaire to countries (incl. EMBs) (Dec.2020-Jan.2021)
 - Open questions on use of ICT, regulatory aspects, plans to extend, difficulties, procurement, resources & in-house competences, public scrutiny & indep.verification, int.cooperation, COVID19
 - Detailed sub-questions, e.g. on regulatory aspects (ensuring compliance, level of detail of regulation, regulation of specific aspects e.g. usability, confidentiality, transparency, cybersec., controls and responsibilities, etc.)
- First presentation of results of the questionnaire (GT-DT, 8 Feb.)
 - Compendium of replies (125 pp collated info from 24 MS)
 - Summary of replies (20 pp consolidated info by issue)
- Detailed discussion of results + first proposal for Guidelines (CDDG, 16 Apr.)
- **Presentation of the draft Guidelines (GT-DT, 28 May)**
- Consultation (June/July), consolidation (July-Aug.), presentation (Sept.)

Presentation of the draft Guidelines

- Preamble, Scope, Core principles of democratic elections (Introduction)
- **Guidelines (1-12)**
- Glossary

Considerations about specific stages of the electoral process and considerations about the use of specific technologies are not part of the Guidelines.

Work on these parts may take place in the future (e.g. merge with “summary of replies”) and they may be eventually shared with the WG however for information only.

Presentation of the draft Guidelines

- Scope of the Guidelines
 - do not address e-voting (EVM, i-voting, e-counting)
 - do not address opinion formation (campaigning)
 - address use of ICT in all other steps of the electoral process (~75 types of documents and processes backed by ICT identified by questionnaire, incl. EMS, register/ing, signing in support of issues/candidates, training and accreditation, authentication of voters, processing of results)
- Aim of the Guidelines: integrity of the electoral process and citizens' trust in it
 - trustworthiness of the ICT solution and integrity of results
 - perception of trust and trust-building measures
- Regulatory levels
 - distinguish "interpretation of principles" from "technical implementation"
 - involve the legislator/regulator whenever questioning the principles
 - ensure fair balance (interpretation of conflicting principles) that respects the essence of all relevant principles

Melanie Volkamer

Guideline 1 - Requirements

Guideline 2 - Usability

Guideline 9 - Evaluation

Guideline 10 - Risk Management

1. Member States shall ensure that ICT solutions respect the principles of democratic elections and referendums; and other relevant principles ...

... and shall develop requirements that fully reflect the principles.

- Conflicting principles
 - no (ICT) solution reflects all principles to 100%, all have their advantages and disadvantages
 - Important to define the degree to which principles have to be met at minimum
 - Note on the importance of assumptions in the security context: one needs to know all the assumptions that need to be in place to meet each of the principles → deduce how realistic these assumptions are / what are the remaining risks → decide whether acceptable or not. → important to define which assumptions are acceptable and which not
 - Important to define in general explain how to deal with conflicting principles
- Related to transparency
 - Describe process / people involved for deducing technical requirements, degree to which they are needed to be met, ...

2. Member States shall ensure the usability and accessibility of ICT solutions in use in the electoral process by applying a human centric approach.

- Definitions
 - Usability: Efficiency, Effectiveness, Satisfaction for any user interface (ISO 9241)
 - Accessibility: Various groups to be addressed
- Degree that need to be met should be defined according to G-1 and made transparent
- Human centric approach for usability and accessibility
 - i.e. having future users involved through the decision and design process
 - (e.g. through semi-structured interviews, focus groups, mockup feedbacking)
 - incl. post election feedback
 - Documentation of effort (& make it transparent)

9. Member States shall organise an evaluation of the ICT solutions used in the election process by independent experts.

- Note: Focus on before first usage
- Decisions to be made:
 - Only selected experts can evaluate or everyone because documents/source code/... is made public
 - Which frameworks to be used for which type of requirements (different experts for different requirements)
- Ideal security evaluation framework for product:
 - Two independent entities for the evaluation and the certification;
 - Clear definition of the target of evaluation
 - Clear definition of assumptions required to meet requirements
 - Evaluation assurance level
- Evaluation of the infrastructure and processes (e.g. for security aspects: ISO 27001)
- Usability and Accessibility evaluation (see G-2)
- Evaluation and certification reports for transparency
- Define how to deal with changes after the certification / procedures in place

10. Member States shall conduct a continuous risk management of the ICT solutions used in the election process.

- Be aware of remaining risks and document decisions (transparency)
- Relevant in different phases
 - For the requirement engineering: risks that come with degrees/assumptions G-1
 - Before start using it:
 - Results from evaluations G-9
 - Includes having emergency plans for while using it
 - During using it: at least: Document and discuss 'unusual' cases
 - After using it
 - audits of the election management board system
 - collect user feedbacks
 - In preparation of future elections
 - discuss how to avoid risks happening during the election in future
 - discuss how to improve

Robert Krimmer

Guideline 3 - Capacity of MS

Guideline 12 - Outsourcing

Guideline 4 - Integrity of Elections

Guideline 7 - Transparency

3. Member states shall build and retain the necessary capacity to assess, introduce and manage the use of ICT solutions in the electoral process.

- Capacity of EMBs include having administrative and technical capability to plan, implement and administer ICT solutions
- Further this includes having trained human resources, the necessary tools, and overall resources, including enough time
- This requires essential investment into education and training of the human resources of an EMB
- The essential goal of this is, not having to outsource the core processes of an election to a private entity.

12. Member States shall be ultimately responsible, also in cases where private stakeholders are involved.

- The ultimate responsibility lies with the MS, thus has to develop the requirements for the ICT solution, as well as ensuring in the essential contract that the contracted entity has to fulfil the same standards and expectations that are put to the MS.
- It is clear, that even if processes in the electoral process are outsourced and/or subcontracted, the provider needs to respect and fulfil the same requirements as the MS.

4. Member states shall ensure the integrity and authenticity of the information provided by ICT solutions in use in the electoral process. Procedures shall be put in place to detect and, if possible, correct any errors or unauthorized intervention.

- The aim for the operation of any ICT solution in the electoral process is to do so without any errors and thus to ensure the integrity of the election.
- The organisation of the election should provide for accurate checks and balances throughout on all levels of the election.
- Errors can occur because of failure of the system, programming errors, malpractice, as well as intentional hacking and manipulation by outside actors
- It is essential, to provide for an accountable and transparent procedure on how to touch a running system, correct any data, or change/replace a malfunctioning system

7. Member states shall ensure transparency of the election and the ICT solutions used.

- This includes publication recommendations as outline in the previous slides
- The aim is to inform the stakeholders about the ICT solution, including the introduction into the election (elaborating the strategy, assumptions underlying the decision, feasibility, procurement of the solution, evaluation, source code, etc.), its operation, as well as the post-election assessment of its use
- This includes also provide access to observers
- Transparency measures should also include provisioning of structure data about the election process, such as open data

Ardita Driza Maurer

Guideline 5: Availability and reliability

Guideline 6: Confidentiality and data protection

Guideline 8: Alternative low-tech solution

Guideline 11: Use of ICT in case of *force majeure*

5. Member states shall ensure the outmost availability and thus reliability of the ICT solutions in use in the electoral process, so that no (noticeable) interruption of the election process occurs.

- Decide the level of availability/reliability and make it transparent (e.g. 99% availability, means 1 min in every 100 min no availability)
- Availability and reliability are closely linked to the quality/trustworthiness of the ICT solution
- Furthermore, procedural measures should be foreseen by MS:
 - Before starting operation, satisfy itself that the ICT solution is genuine and operates correctly
 - Procedures for installing updates and corrections during operation
 - Information in case of incidents (those responsible for operating the equipment immediately inform the competent authority...)
 - Fallback solutions (e.g. alternative channels/supports) and recovery plans to ensure availability of data and election continuity (e.g. availability of registers' information, continuation of voter authentication, of results' transmission, etc.) even in case of failures or attacks on the ICT solution

6. Member states shall ensure the secrecy, respectively the confidentiality, of information stored within the ICT solutions, as required by election and data protection laws.

- Nexus between electoral legislation and data protection legislation
- Electoral law does address secrecy or confidentiality of voting, but usually contains no specific provisions on protecting other data such as information found in different registers or in the protocols for transmission of results
- Data protection requirements (e.g. data minimisation, privacy by design, etc.) apply, as a minimum
- Data protection considers election-related information as “sensitive”
- According to data protection regulations, processing “sensitive information” requires the adoption of specific measures
- MS need to consider whether such specific measures are necessary. If yes, these should be included in electoral legislation

8. For the case where the proposed e-solution is not universally accessible by all potential users, Member States shall provide an alternative non-ICT-based solution.

- Identify all potential users of the document/process backed by an ICT solution
- Consider whether the ICT solution is accessible to all of them (see G. 2 on definitions of usability and accessibility)
- If not, envisage the use of an alternative low-tech solution to ensure universal access to the document/process in question
- If parallel low- and high-tech solutions are used, regulation should clarify the conditions for using them and the legal value of results produced by them in case where a user has access to both of them

11. Member States prepare for situations where “force majeure” might impact the conduct of elections and shall proactively address the possible use of ICT solutions in such a situation.

- Builds upon current developments in MS following experiences with elections held during COVID19 pandemic
- Proactively address the challenges to the organisation of elections if similar situations occur in the future
- Aim: avoid rushing to introducing ICT on a short notice. Prepare in advance for such possible use and organise it in accordance with the Guidelines

APPENDIX IV

VENICE COMMISSION-LIST OF DOCUMENTS

Page **Emergency powers - what standards?**

https://www.venice.coe.int/WebForms/pages/default.aspx?p=02_EmergencyPowers&lang=en

Document **Respect for democracy, human rights and the Rule of law during states of emergency – Reflection**

[https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-PI\(2020\)005rev-e](https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-PI(2020)005rev-e)

Compilation of Venice Commission Opinions and Reports on States of Emergency

[https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-PI\(2020\)003-e](https://www.venice.coe.int/webforms/documents/default.aspx?pdffile=CDL-PI(2020)003-e)

15th European Conference of the Electoral Management Bodies, Conclusions

<https://www.coe.int/en/web/electoral-management-bodies-conference/conclusions-emb2018>