



Workshop of Quality on Statistics for SDG Indicators 23 - 25 April 2018, Chiba, Japan

conducted jointly by the Statistical Institute for Asia and the Pacific, the United Nations Statistics Division and the Director-General for Policy Planning on Statistical Standards, the Ministry of Internal Affairs and Communications of the Government of Japan, with support of the International Monetary Fund

Session 1: Statistical quality assurance – an overview

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Relevant General Assembly Resolutions for SDG Monitoring

- The General Assembly in its **Resolution 70/1**, “Transforming our world: the 2030 Agenda for Sustainable Development”, adopted at the United Nations summit for the adoption of the post-2015 development agenda on 25 September 2015 stressed that follow-up and review processes at all levels will be informed by data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts (para 74.g).
- On 6 July 2017 the General Assembly adopted **Resolution 71/313** Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development - Only the second GA resolution on statistics after the adoption of the Fundamental Principles of Official Statistics

Resolution A/RES/71/313 on SDG indicators

1. Members States adopt the global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development, as a voluntary and country-led instrument that includes the initial set of indicators to be refined annually and reviewed comprehensively [...] and will be complemented by indicators at the regional and national levels, which will be developed by Member States;
2. Member States request the Statistical Commission to coordinate the substantive and technical work to develop international statistical standards, methods and guidelines, where necessary, to fully implement the global indicator framework

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Resolution A/RES/71/313 on SDG indicators

6. Stresses that official statistics and data from national statistical systems constitute the basis needed for the global indicator framework and role of national statistical offices as the coordinator of NSS;
7. Stresses that all activities of the global statistical system must be in full adherence with the UN Fundamental Principles of Official Statistics and ECOSOC Resolution 2006/6;

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Definition of quality in Statistics

While there are several general definitions of quality, one of the most commonly used and succinct definitions is “fitness for use” or “fitness for purpose”.

“Fitness for use” is the degree to which a set of inherent characteristics fulfils requirements

[The ISO 9000 Quality Management System’s definition, cited in the SDMX Metadata Common Vocabulary and in the NQAF expert group’s Glossary]

Over the past twenty years, statistical agencies have arrived at a consensus that the concept of quality of statistical information is multi-dimensional and that there is no one single measure of its quality. The dimensions of quality are overlapping and interrelated and, therefore, the adequate management of each of them is essential if information is to be fit for use.

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Universal obligation of quality assurance in official statistics

The United Nations Fundamental Principles of Official Statistics – the first two:

Principle 1. Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honor citizens’ entitlement to public information.

Principle 2. To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.

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Possible UN Stat. Commission Recommendation

Based on principle 1 and 2 of the UN Fundamental Principles of Official Statistics it can be recommended (proposed draft in updated UN NQAF)

1. that countries establish a national quality assurance framework for official statistics and that all members of the national statistical system are committed to continually assessing, improving and reporting on the quality of official statistics as well as on the quality of data and statistics supplied by additional data providers and used in production of official statistics or disseminated in cooperation with members of NSS, as required.
2. that countries include the requirements of quality assurance in their national statistical legislation and other legislation mandating compilation of statistics for official use.

Possible UN Stat. Commission Recommendation

Based on principle 1 of the UN Fundamental Principles of Official Statistics it can be recommended (proposed draft in updated UN NQAF)

3. that the national quality assurance framework for official statistics is being developed in consideration or in alignment with the UN NQAF or similar existing quality assurance frameworks.
4. that the national quality assurance framework is implemented at the national statistical office and throughout the entire national statistical system. Furthermore, it is recommended that the national quality assurance framework is applied to all data and statistics produced outside of the national statistical system that is disseminated with the help and support of a member of the national statistical system or that is used for government decision making, unless such data is clearly marked as not being official statistics.

Quality frameworks and quality management

Definition: **Quality frameworks provide a coherent and holistic system of quality management.**

- There are various general quality frameworks with application to any organisation, such as TQM (Total Quality Management), ISO, Six Sigma, EFQM (European Foundation for Quality Management), Balanced Scorecard, Lean and Lean Six Sigma.
- These systems are largely based on common definitions and principles, but they vary with regard to main focus and formalisation. In ISO emphasis is placed on certification, while Six Sigma focuses on quality control using statistical methods. Lean emphasises improvement in efficiency by reducing waste.

Quality frameworks and quality management

- In many ways, TQM, which was developed in the last century, is the mother of all general quality systems.
- TQM is “a set of systematic activities carried out by the entire organisation to effectively and efficiently achieve company objectives so as to provide products and services with a level of quality that satisfies customers, at the appropriate time and price”.
- The strategic core of all major TQM models is continuous improvement, often illustrated with reference to the so-called Plan-Do-Check-Act (PDCA) cycle made popular by Deming. This cycle is a four-step process which has to guide all changes for continuous improvement.

Statistical quality frameworks

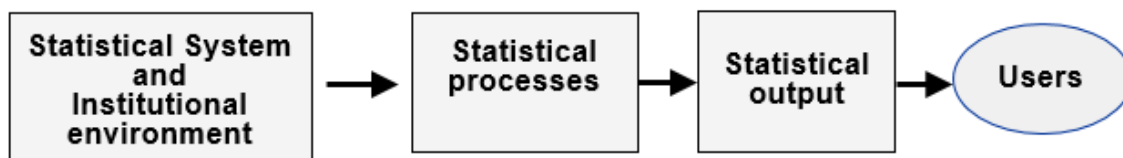
- The general quality frameworks inspired existing statistical quality frameworks such as the European Statistics Code of Practice, the IMF's Data Quality Assessment Framework (DQAF) and the OECD recommendations on good statistical practices.
- UN NQAF was developed based on these statistical frameworks and in alignment with them follows the holistic model to quality management, starting from the statistical system and institutional environment and covering statistical processes and outputs:

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Statistical quality frameworks

Quality management framework of UN NQAF



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Quality Assurance Guidelines of UN NQAF = the quality management framework

Managing the statistical system

[NQAF 1] Coordinating the national statistical system
[NQAF 2] Managing relationships with data users and data providers
[NQAF 3] Managing statistical standards

Managing the institutional environment

[NQAF 4] Assuring professional independence
[NQAF 5] Assuring impartiality and objectivity
[NQAF 6] Assuring transparency
[NQAF 7] Assuring statistical confidentiality and security
[NQAF 8] Assuring the quality commitment
[NQAF 9] Assuring adequacy of resources

Managing statistical processes

[NQAF 10] Assuring methodological soundness
[NQAF 11] Assuring cost-effectiveness
[NQAF 12] Assuring soundness of implementation
[NQAF 13] Managing the respondent burden

Managing statistical outputs

[NQAF14] Assuring relevance
[NQAF15] Assuring accuracy and reliability
[NQAF16] Assuring timeliness and punctuality
[NQAF17] Assuring accessibility and clarity
[NQAF18] Assuring coherence and comparability
[NQAF19] Managing metadata

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Quality assessment as part of quality management

- **Definition: Data quality assessment is an important part of the overall quality management system of a statistical agency or unit.**
 - However, its scope is limited to the statistical products and the processes leading to their production.
 - Methods and tools for quality assessment comprise user surveys, quality reports, quality indicators, measurement and analysis of process variables, risk management, self-assessment and auditing (internal or external quality reviews), including peer reviews, as well as the approaches labelling and certification. An efficient and cost-effective use of the methods requires that they are used in combination with each other. E.g. quality reports could be the basis for audits and user feedback.

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Benefits of a NQAF

The main benefits of having a national quality assurance framework in place are:

- It provides a systematic mechanism for facilitating the ongoing identification of quality problems in national statistical systems and for developing possible actions for their resolution. - At the same time, it serves to stimulate and maximize the interaction among staff of each NSS member and throughout the entire NSS;
- It gives greater transparency to the processes by which quality is assured and reinforces the image of the national statistical (agency) office as not only a credible provider of good quality statistics but as the coordinator of quality assurance of official statistics in general;
- It provides a basis for creating and maintaining a quality culture within the national statistical system and contains reference material that can be helpful for training;
- It supports quality improvements and their maintenance over time;
- It is a mechanism for the exchange of ideas on quality management between producers of statistics within the national statistical system, with other national data providers as well as with other national, regional and international statistical organizations.

Benefits of a NQAF

➤ **Challenges:**

- Quality is taken for granted
- Quality assurance efforts are costly, and perceived as being without tangible benefit, and reactive/ex-post

➤ **Possible solutions**

- Top-management level/organizational commitment
- International requirements and commitments (IMF, OECD, Eurostat, and SDGs)
- Communication, search for tangible or “quick” wins
- Integration with risk-management (active/ex-ante)

Relaunch of Expert Group on National Quality Assurance Frameworks (EG-NQAF) by the UN Statistical Commission in March 2017

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Background

UN NQAF Template and Guidelines of 2012 were a huge step forward, however,

- The NQAF Template was only intended to be a tool to provide the general structure within which individual country-specific national quality assurance frameworks can be developed by countries that choose to do so;
- It contains little implementation guidance, is difficult to use, and it is entirely descriptive, containing no recommendations.

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In its decision to re-establish the EG-NQAF the Statistical Commission

(d) Stressed the importance of high-quality and disaggregated data for the full implementation and reporting of the Sustainable Development Goals at the national, regional and global levels [...];

(f) Emphasized the importance of ensuring the quality of data derived from new sources and new data providers, including those outside the official statistical system;

(g) Requested the Expert Group to address issues involved in the implementation of the national quality assurance framework, including issues of coordination, and the need to support countries in its implementation.

Work program of the EG-NQAF

1. Assess the implementation of the Generic National Quality Assurance Framework (NQAF) Template and Guidelines in countries.
2. Review the available guidelines and supporting materials for the implementation of the NQAF Template and Guidelines and examine how its implementation in countries can be further supported in light of the data needs of the 2030 Agenda for Sustainable Development;
3. Update the NQAF Template and Guidelines and amend the overall information package as required;
4. Review the issue of quality assurance within the global statistical system, and consider what further guidance could be provided in support of the global reporting of the SDG indicators.

Overview of national practices: - Results of UN NQAF survey

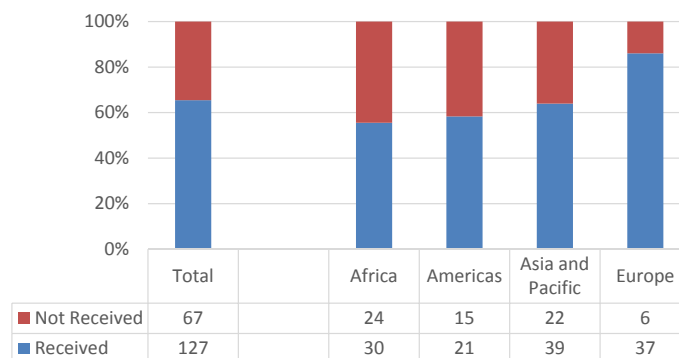
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UN NQAF survey

- One of the tasks of the Expert Group on the National Quality Assurance Frameworks is to assess the implementation of the UN NQAF.
- Electronic survey was sent to Member States in December 2017.
- In April 2018 the survey was closed with a total of 127 responses collected.

Country responses received per region

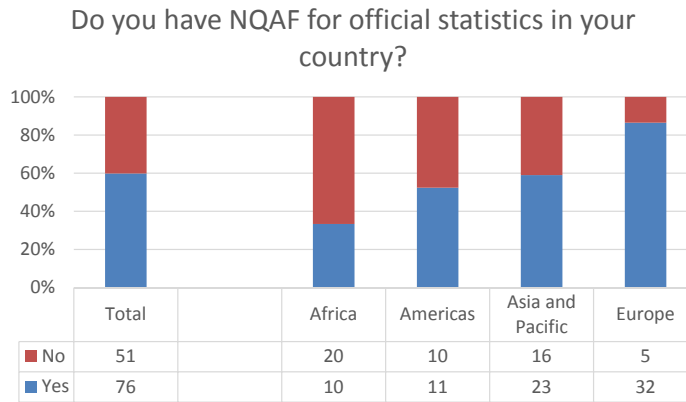


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UN NQAF survey results

- About 60% of respondents confirmed that they do have NQAF.
- Highest percentage in the European region.

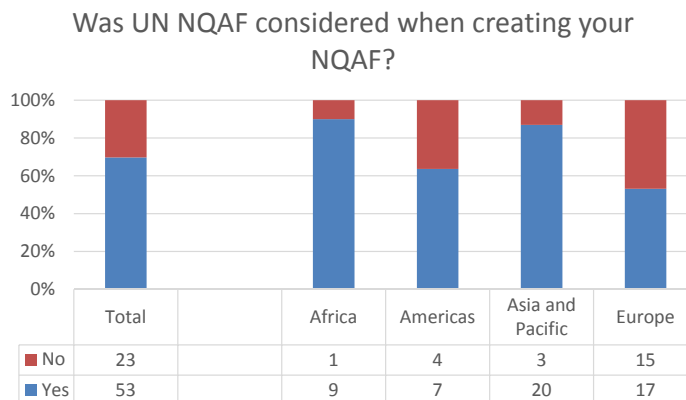


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UN NQAF survey results (continued)

- About 70% of respondents considered UN NQAF when creating their own NQAF.
- It was most frequently considered in the regions of Africa and Asia and Pacific.

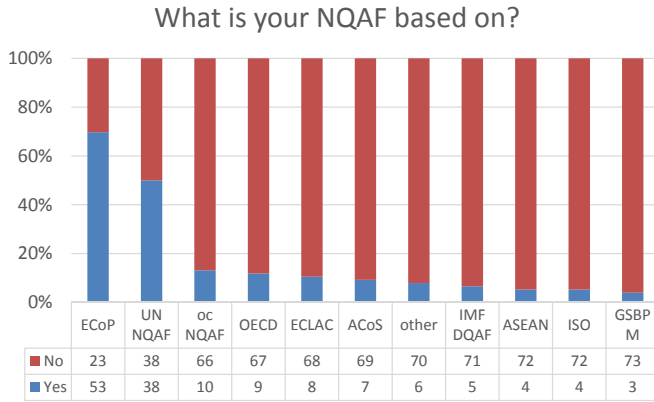


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UN NQAF survey results (continued)

- The two most frequently models used globally as a basis for NQAF are European Code of Practice (ECoP) and UN NQAF.



Abbreviations used:

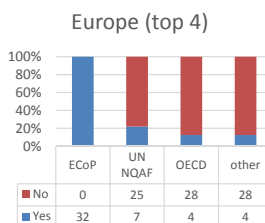
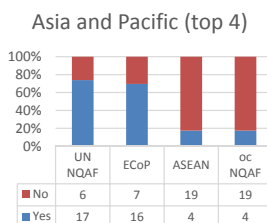
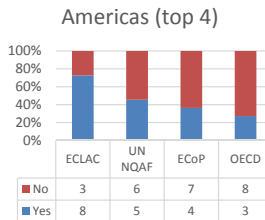
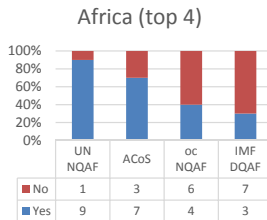
- ECoP**: European Code of Practice
- oc NQAF**: other country's NQAF
- OECD**: Organization for Economic and Cultural Development, Good Statistical Practice
- ECLAC**: Code of good practice in statistics for Latin America and the Caribbean
- ACoS**: African Charter on Statistics
- IMF DQAF**: International Monetary Fund, Data Quality Assessment Framework
- ASEAN**: Association of South-East Asian Nations (ASEAN) Community Statistical System (ACSS)
- ISO**: International Organization for Standardization
- GSBPM**: Generic Statistical Business Process Model

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UN NQAF survey results (continued)

- The most frequently models used as a basis for NQAF creation differ substantially between the regions, with regional models (ACoS, ECLAC and ECoP) being usually used widely within the region.



Abbreviations used:

- ECoP**: European Code of Practice
- oc NQAF**: other country's NQAF
- OECD**: Organization for Economic and Cultural Development, Good Statistical Practice
- ECLAC**: Code of good practice in statistics for Latin America and the Caribbean
- ACoS**: African Charter on Statistics
- IMF DQAF**: International Monetary Fund, Data Quality Assessment Framework
- ASEAN**: Association of South-East Asian Nations (ASEAN) Community Statistical System (ACSS)
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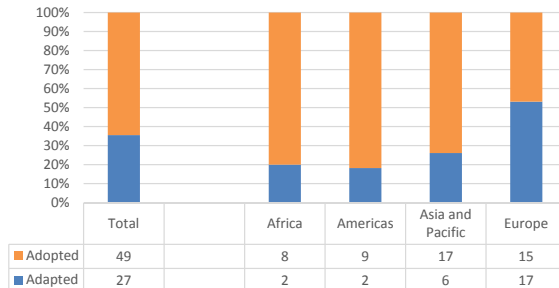
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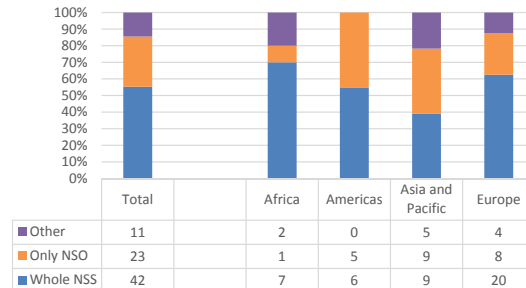
UN NQAF survey results (continued)

- Basis model is usually being adopted as it is, without much modification, with the exception of the European region, when more than half countries said they adapted the original model to reflect their country situation.
- NQAF is usually covering the whole National Statistical System (NSS), which is mostly visible in the regions of Africa and Europe.

Is your NQAF adopted as it is or adapted to national conditions?



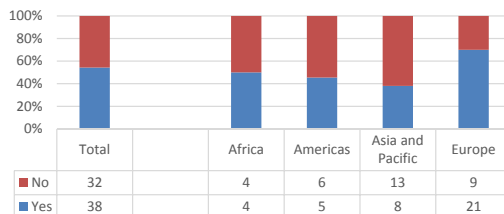
What is the coverage of your NQAF?



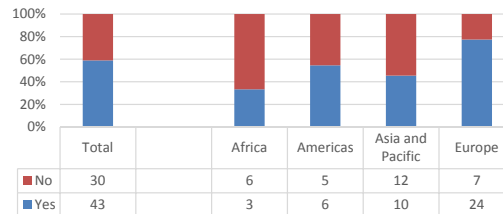
UN NQAF survey results (continued)

- About half of respondents globally claimed that NQAF is being applied to data used to calculate SDGs, with the highest rate in the European region.
- Close to 60% of respondents globally apply NQAF to information obtained from alternative new sources, again with the highest occurrence rate in the European region.

Is your NQAF being applied to data used to calculate SDGs?

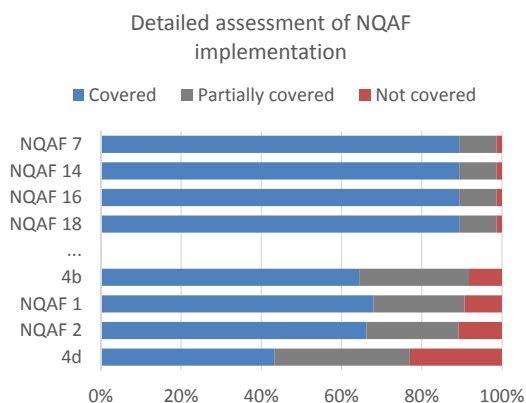


Is your NQAF being applied to information obtained from alternative new sources?



UN NQAF survey results (continued)

- The most well addressed elements of UN NQAF relate to confidentiality and security of the data and to some quality dimensions of statistical outputs (relevance, timeliness and punctuality and coherence and comparability).
- Elements appearing to be the most troublesome are: conducting assessment; labelling and certification, some aspects of managing the statistical system (coordination and managing relationships) and quality reports.



Abbreviations used:

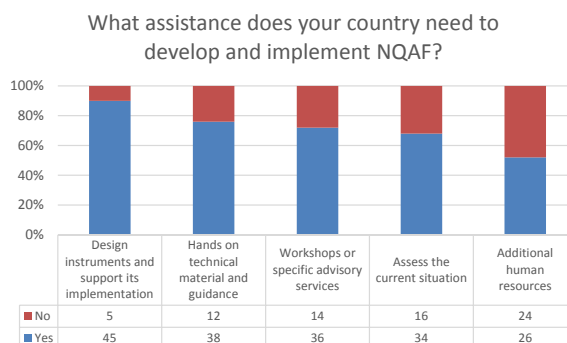
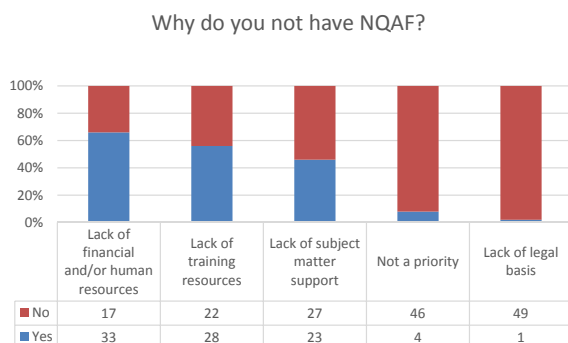
- **NQAF 1:** Coordinating the national statistical system
- **NQAF 2:** Managing relationships with data users and data providers
- **NQAF 7:** Assuring statistical confidentiality and security
- **NQAF 14:** Assuring relevance
- **NQAF 16:** Assuring timeliness and punctuality
- **NQAF 18:** Assuring coherence and comparability
- **4b:** Communicating about quality - quality reports
- **4d:** Conducting assessments; labelling and certification

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UN NQAF survey results (continued)

- Main reasons for not having NQAF are lack of resources (financial and/or human; training) and lack of subject matter support.
- Two most needed things to develop and implement NQAF are the design of quality assurance instruments and the support of its implementation, and hands on technical material and guidance.



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UN NQAF survey results (continued)

The following are main comments and suggestions received from respondents regarding further development of the UN NQAF:

- addressing resource requirements and resource management;
- providing links with other existing frameworks and models;
- addressing newly emerging data sources, especially in the light of SDG reporting requirements;
- sharing best practices;
- enhancing standardization and coordination;

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THANK YOU

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