Bibliometric Analysis Of Articles Presented Under Commission 7: A Case Of The 25th Fig Congress In Malaysia In 2014

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Key words: Bibliometric analysis, FIG, commission 7, Malaysia

SUMMARY

Examination of written studies conducted in certain sciences in specific periods is of great importance both in determining the level of development in the sciences covered and in determining the intensity over which subjects are predominant. For this purpose, the congresses organized by various institutions with certain periods and the related studies are shared with related persons and institutions. One of the institutions that make a great contribution to the global development of our profession is the International Federation of Surveyors (FIG). Commissions created in the FIG are given the future direction of our profession. In the congresses organized by the FIG in various countries every 4 years, various academic studies are presented under the name of commissions. It informs and directs the reader about the relevant topic with the information it contains in academic works (Article, papers, etc.), an important tool for sharing information. By means of a bibliometric method, which is a kind of scientific text analysis, certain findings of documents or publications are analyzed and various findings related to scientific communication are obtained. The purpose of this study is to share the results of a bibliometric analysis of academic studies presented under Commission 7 at the 25th FIG Congress in Malaysia in 2014. The following questions have been set for the analysis:

- How are the articles distributed according to the countries?

- How is the distribution of the articles content according to the countries?

- How is subject distribution of the articles?

- How is the distribution of the articles according to the number of authors?

With the answers given to the questions, it is evaluated the progress of scientific development from a professional point of view.

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INTRODUCTION

The mass communication tools that emerge together with the developing technology have an important place in our daily life. Thanks to this development, the world of science has become closer to each other, sharing of knowledge and experience has been accelerated and scientific communication activity has increased. The sharing of information resources on the web, participation in international projects and conferences, and similar scientific activities have increased rapidly in recent years. Textual works (articles, papers etc.) which is an important tool for sharing information inform and direct the reader about the related topic with the information and the references. In bibliometric research, which is a kind of scientific text analysis, certain features of documents or publications are analyzed and various findings related to scientific communication are obtained (Al and Costur, 2007). Quantitative assessment of the development of science and technology by bibliometric methods allows for the development of specializations within the framework of world standards or the comparison of national institutions with each other (Zan, 2012). According to Archambault and Gagné (2004), bibliometry and scientometric are the indexes of methods used to measure and propagate the production of scientific information.

One of the institutions that make a great contribution to the global development of our profession is the International Federation of Surveyors (FIG). The future of our profession is directed with commissions created in the FIG. In the congresses organized by the FIG in various countries every 4 years, various academic studies are presented under the name of commissions. In this study, a bibliometric analysis of acamedic works that presented under Commission 7 at the 25th FIG Congress in Malaysia in 2014 was performed in terms of authors, institutions, countries and topics.

1. BIBLIOMETRIC ANALYSIS

It is impossible for an individual researcher to be equipped with all the necessary knowledge and technical skills in modern research systems that are becoming increasingly complex and encompass multiple fields of expertise (Mattsson, 2008). For this reason, it is encouraged that researchers from different institutions, different institutes and different scientific fields cooperate with each other in order to share information by complementing each other with knowledge and skills and equipped scientists and to produce new ideas in this way. Bibliometry is a quantitative analysis in the general sense and statistically analyzes published articles and referrals made in the magazines (De Nicola, 2009; Godin, 2006). Although books, theses, reports, patents are considered as elements of bibliometric analysis, scientific articles constitute the main element. The number of publications and authors, references to publications constitute

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the basic data of the bibliometric measure (Karasözen et al., 2009; Polat and Alkan, 2015). In order to perform bibliometric analysis, the number of publications must be large enough. For this reason, bibliometric analyzes are mostly carried out at the level of departments, research groups, universities and countries (Karasözen vd. 2009).

2. MATERIAL and METHOD

For the bibliometric analysis, at the 25th Congress in Malaysia in 2014, 89 papers presented in 14 sessions related to Commission 7 were examined. Distribution of 398 studies presented at the congress according to the commission is shown in the graphic in figure 1. The first three committees that made the most scientific study according to graphical order were Commission 7 (89 papers), Commission 5 (72 papers) and Commission 3 (49 papers).

The distribution of the articles presented in the sessions related to Commission 7 is shown in the graphic in figure 2. Articles presented at the session related to Commission 7 were reported in terms of authors, institutions, countries and topics, and the results obtained were interpreted in Results section.
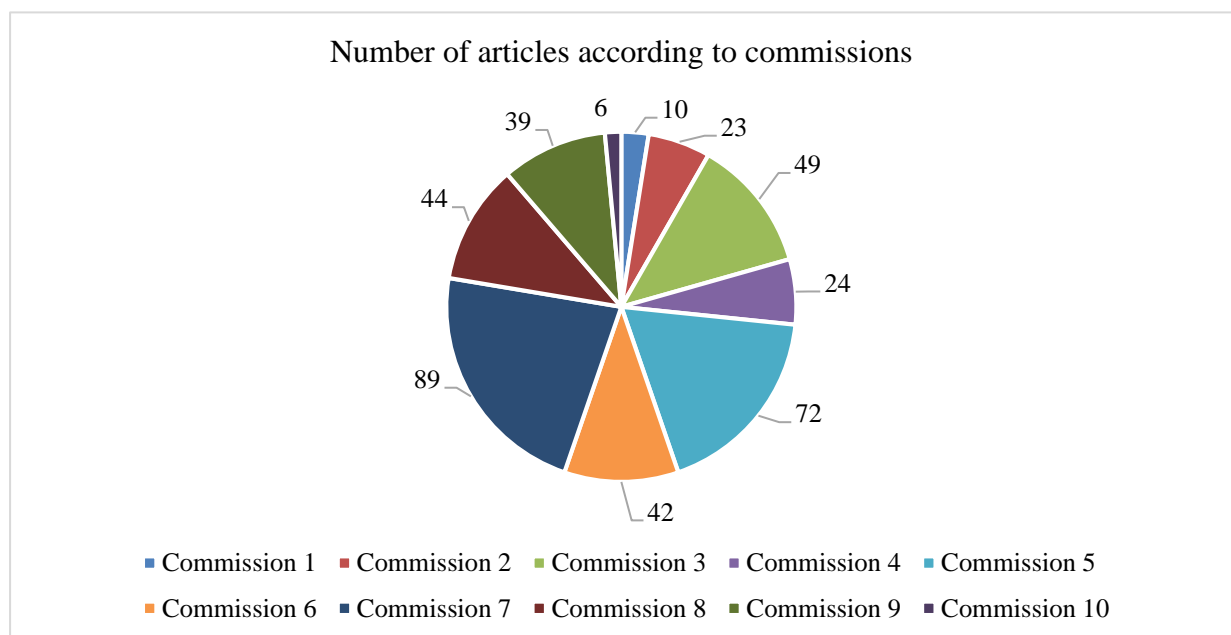

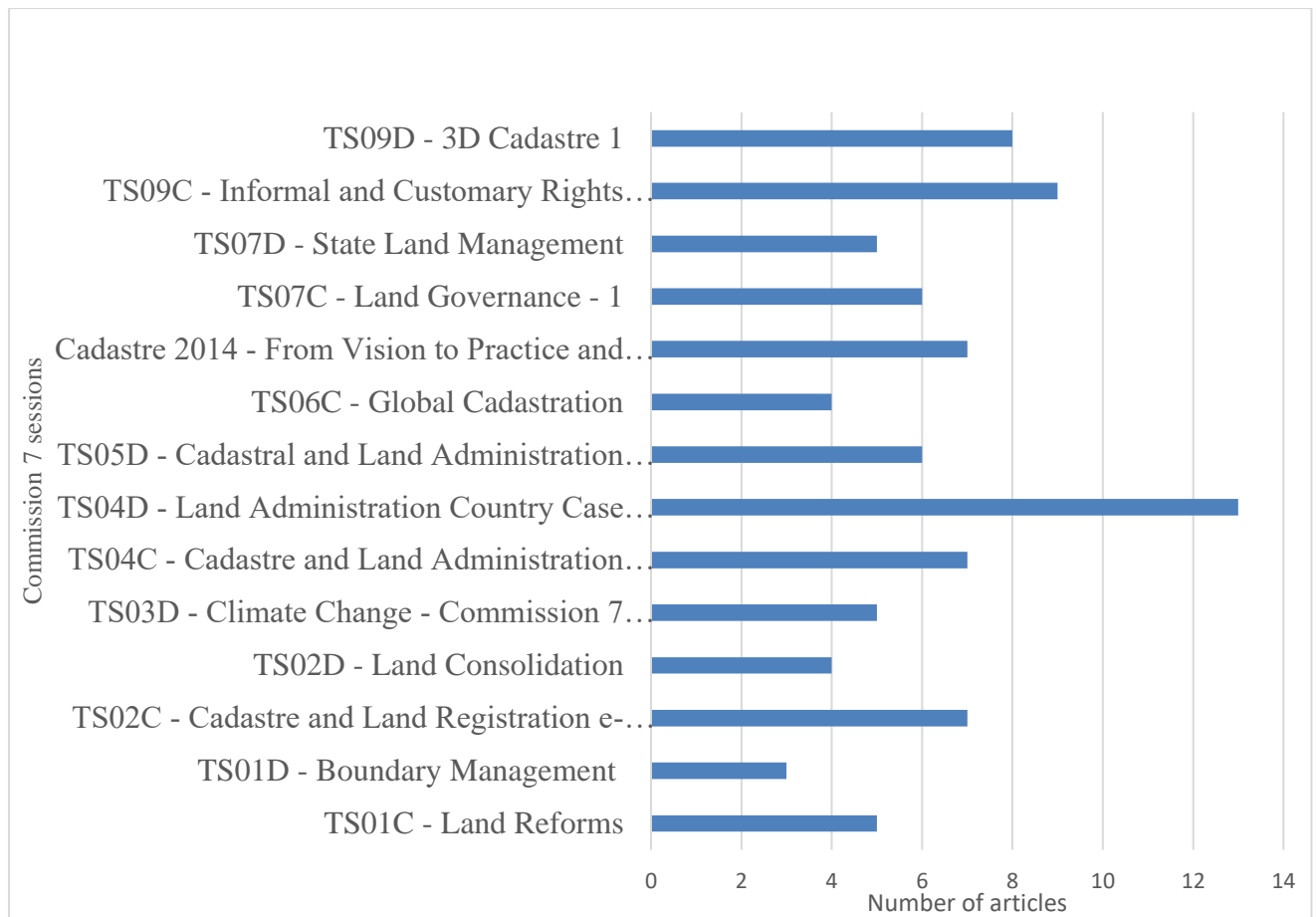Figure 1 Number of articles according to commissions

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Figure 2 Number of articles according to Commission 7 sessions

3. **RESULTS**

3.1 Author Analysis

92 authors have contributed 89 articles which presented related to Commission 7. Number of papers by number of authors is shown in the graphic in figure 3. According to the information in the graphic, 37 articles were prepared by one author. The number of 2 authors articles is 25. The number of 3 authors articles is 15. The top contributor author are shown in the graphic in figure 4. The most contributing authors are Daniel Steudler (4 articles) and Abbas Rajabifard (4 articles).
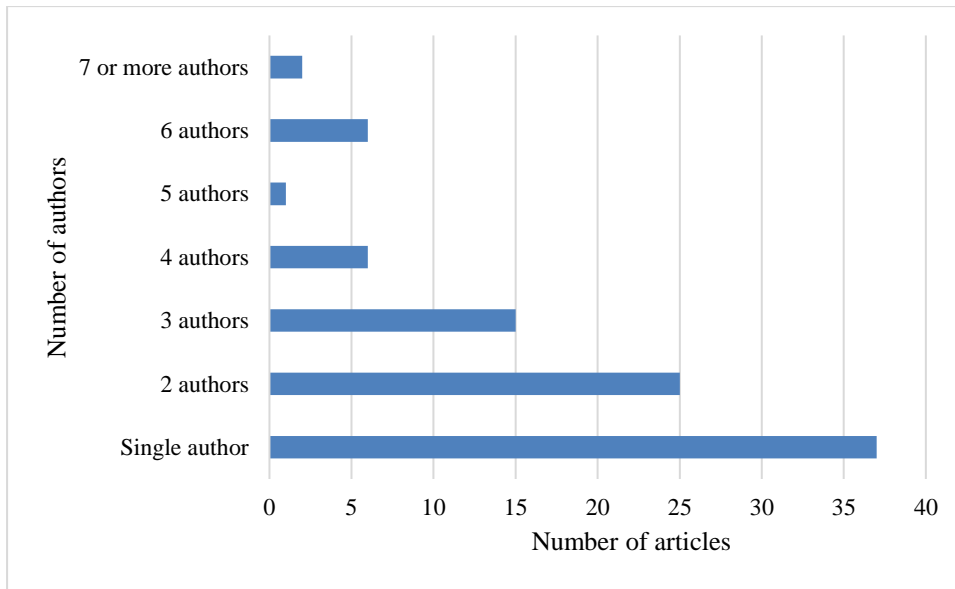
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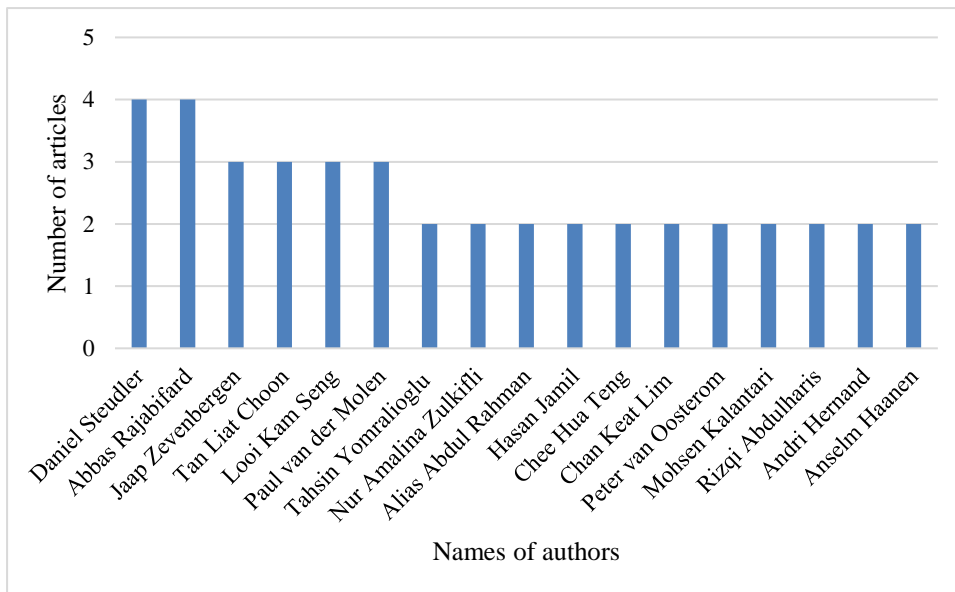Figure 3 Number of articles by number of authors

Figure 4 Most contribution authors

3.2 Institutional Analysis

Distribution of authors according to institutional information is given in the figure 5.

According to the graphical data, 45 articles contributed by the authors working in the university, 31 articles contributed by authors working in the public, 15 articles contributed by authors

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working in the private sector. Public institutions and universities have contributed 6 articles. Private sector and universities have contributed 3 articles. Private sector and public institutions have contributed 1 articles. These results show that inter-institutional work exists.
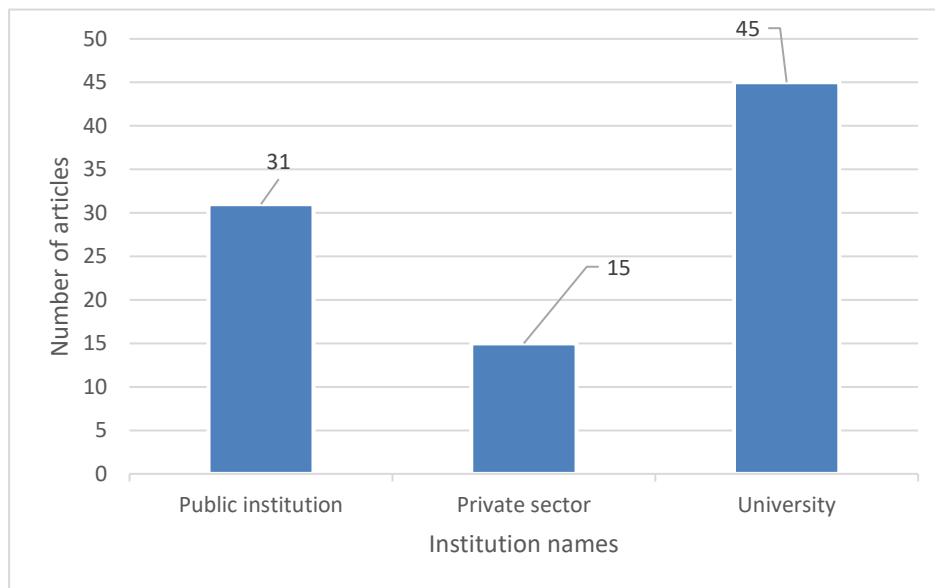

Figure 5 Distribution of authors according to institutions

3.3 Country Analysis

The authors' country information and the number of articles contributed by these countries are given in table 1. The most contributing countries are the Netherlands (13 articles), Australia (10 articles), Malaysia (9 articles), the United Kingdom (7 articles) and Switzerland (7 articles). Looking at the countries in Table 1, authors from all over the world contributed to the Congress.

Table 1 Country names and article numbers

Country names	Number of article	Country names	Number of article
Netherlands	13	USA	2
Australia	10	Ethiopia	1
Malaysia	9	Fiji	1
United Kingdom	7	Kosovo	1
Switzerland	7	Belgium	1
Turkey	6	Thailand	1

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Hungary	6	Canada	1
New Zealand	3	Kenya	1
Indonesia	3	Cambodia	1
Sweden	3	South Africa	1
Republic of Korea	2	Jamaica	1
Nigeria	2	Botswana	1
Denmark	2	Russia	1
France	2	Germany	1
Finland	2	Hong Kong	1
Philippines	2	Croatia	1
Japan	2	Poland	1
China	2	Ghana	1
Singapore	2		

3.4 Topic Analysis

Subject and keyword analysis of the 89 articles presented related to Commission 7 were made. Articles are mainly covered by 3 topics. These are Land Administration, Cadastre and Spatial Information Management (see Table 2). Key words commonly used under these topics are listed in Table 2. When we look at the distribution of the key words, it appears that scientific studies have been made in almost every aspect related to the land. The word cloud formed according to the frequency of use of keywords for each topic is given in Figure 6, Figure 7 and Figure 8.

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Table 2 Topics and keywords related to the articles

Topics	Land Administration	Cadastre	Spatial Information (SI) Management
Key words	Sustainable land administration	Cadastre 2034	Spatial Data Integration
	Land Registration	Multi-Purpose Cadastre	SI Infrastructure
	Land Acquisition	The Cadastral Template	Data Mining
	Right of Indigenous	Cadastre 2014	3D Spatial Databases
	Rural Areas	Cadastral Development	Parcel Based SI
	LADM	Marine Cadastre	Spatio-Temporal Data
	Land Governance	Cadastral System	
	Good Governance	Cadastral Information system	
	Urban Expansion	3D Digital Cadastral System	
	State Lands	3D Cadastre	
	Privatization of Land	Web-based Cadastral Survey	
	Land Rights	Development Plans	
	Land Claim Settlements	Cadastral Survey Systems	
	Land Tenure Information	Cadastral Processing	
	Rapid Urbanization	2D Cadastral Registration	
	Social Tenure Domain Model	Cadastral Applications	
	Pro–Poor Land	Cadastre Base Data Model	
	3D City Model	Real Estate Cadastre	
	Land Regularization	Cadastral Infrastructure	
	Urban planning	General Boundary Survey	

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Land Consolidation	Border Management
Urban Development	Public cadastral surveying
Agricultural Land	Private cadastral surveying
Land Surveyors	
Real Property Owner	
Land economy	
urban renewal	
Land readjustmen	
Informal settlements	

Figure 6 Key words cloud of the topic of the land administration

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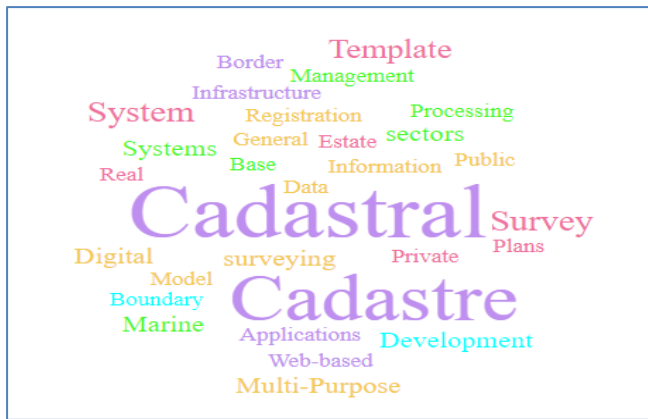Istanbul, Turkey, May 6–11, 2018

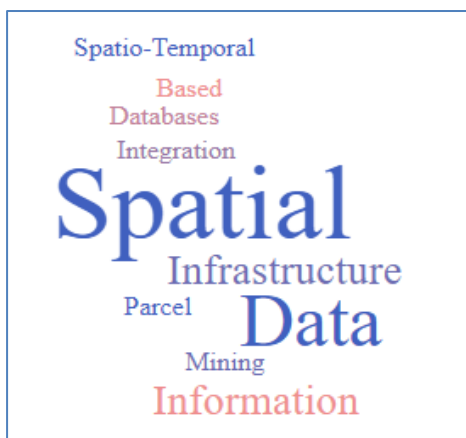Figure 7 Key words cloud of the topic of the cadastre

Figure 8 Key words cloud of the topic of the spatial information (SI) management

4. CONCLUSION

A significant portion of the 89 articles presented in the Congress (37 articles) are prepared by a single author. The remaining articles are 2 or more authors. This shows that both individual participation and multiple participation. Multi-authored articles include mainly the projects topics.

The most contributing institution as a result of the analysis of the institutional information of the authors of 89 articles which presented the Congress is the university with 45 articles. The number of articles contributed by public institutions are 31. The private sector contributed 15 articles. These data show that work carried out on the professional level is followed by all institutions. These institutions have contributed to various articles together. This is an example of cooperation between institutions.

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The congress was attended by authors from 37 different countries. When the distribution of the countries was examined, authors presented articles from the North America (3 countries), Europe (14 countries), Asia (12 countries), Africa (6 countries) and Australia (2 countries) continent. This shows that the FIG congress and its work are being followed from every part of the world. The countries that presented the most articles in the congress on a country basis were Netherlands (13 articles), Australia (10 articles), Malaysia (9 articles), United Kingdom (7 articles) and Switzerland (7 articles). These countries are developed countries in terms of both economic and land management. These countries describe their own developed land management structures in other countries.

The 89 articles presented in the Congress seem to focus mainly on land administration, cadastre and spatial information management. The key words that are produced according to the topics show that the works refer to all the topics related to land administration. The studies included various standards (eg. LADM) and visions (eg. Cadastre 2014 and 2034 Visions) for land administration.

The study offers a variety of contributions to the researcher. The researchers who will work in the field of land administration can get ideas from this work about which subjects can be studied and design their work in this framework. In this context, for future researches the articles presented in other congresses can be included in the examination and the research can be repeated.

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BIOGRAPHICAL NOTES

Zeynel Abidin POLAT received his B.S. degree from Zonguldak Karaelmas University and M.S. degree from Bülent Ecevit University. He is a PhD student and works for as a research assistant in Geomatic Engineering at Yildiz Technical University, Turkey. His research interests are cadastral systems, land administration, GIS

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