



# ЗБОРНИК НА ТРУДОВИ

Втора меѓународна научна конференција  
„Влијанието на научно – технолошкиот развoтoк во  
областа на правото, економијата, културата,  
образованието и безбедноста во  
Република Македонија“



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## ADVANTAGES AND DISADVANTAGES OF SEADOCS AND BOLERO SYSTEMS IN ELECTRONIC TRANSFER OF BILL OF LADING

*The end of the experiment, the beginning of the future?!*

### Abstract

In the era of electronic revolution, the tendency of full implementation of electronic communication in the field of shipping and transport sector (logistic sector), is a fact that not surprise us at all. Process of replacing hard copy communication with electronic shipping communication has undergone a great expansion. The use of EDI systems<sup>1</sup> in all industrial branches, including transport and shipping industry, create great innovations, and are treated as a major benefit for the international mass and fast transfer of goods.

Digitalization in the field of trade, transport and logistic operator's contributes to reducing paper costs, reducing timeline for transport route, and simplification of analysis and storage of transport and trade documents. Despite these efficiencies and convenience, until recently, electronic documentation in the field of transport was not covered by an international convention. Today, this subject has been covered by many international regulations, but business practice still shows doubt regarding the reliability of electronic transfer of property of the goods. This is especially case when it comes to the negotiable bill of lading as a document of title in the sea transport. Based on the concept of transfer bill of lading, three systems are created and: *SeaDocs Registry Limited (SeaDocs)*, *Bolero - Bill of Lading Electronic Registry Organisation*, *Global trade system TM*.

The purpose of this article is to analyze and elaborate each of these systems individually, and to identify their strengths and weaknesses. Throught study of these systems, the author's goal is to prove the justification of bill of lading as electronic transport document in which property rights on the goods are incorporate. More accurately, *is there a place for full implementation of electronic bill of lading in the area of maritime transport (hereafter E/B/L). What is the degree of the risk from using*

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<sup>1</sup> Definitions of EDI, abbreviation for Electronic Data Interchange, exist in great variety. The UNCITRAL Model Law on Electronic Commerce defines it as: "the electronic transfer from computer to computer of information using an agreed standard to structure the information." The Simplification of International Trade Procedure Board (SITPRO) defines EDI to be "the replacement of the paper documents relative to an administrative, commercial, transport or other business transaction, by an electronic message structured to an agreed standard and passed from one computer to another without manual intervention."



*E/B/L with respect to ownership of the goods?! Finally, which of the existing systems of electronic transport can be trusted the most?!*

**Key words:** *bill of lading, letter of credit, transport, freight forwarding, shipping.*

## **1. Advantages and disadvantages of EDI (*electronic data interchange*) system**

Electronic data interchange (hereafter: EDI system) is computer data interchange. This model of communication is booming between business partners which trade (B2B).<sup>2</sup> EDI system in business sector is aimed at providing a compatible system of communication between: *exporters, importers, freight forwarders, logistic operators and other participants in the transport process*. In this context, Ying и Dayong (2005),<sup>3</sup> emphasize that implementation of e-business creates possibility for CFS (*strategic knowledge-based planning system for freight forwarding industry*) partners to collaborate on more attractive way of doing business, increasing the speed of doing business transactions in four segments: *transfer of goods, informations, finances and trade*. The bottom line is creating *collaborative logistics network (system of using internet connection that allows shippers, freight forwarders and carriers to coordinate services electronically CFS)*, which enable the concept of *just in time* delivery in the area of transport and shipping industry.

Last few decades EDI is becoming a logical phenomenon in all segments of the transport operations. IT technology is an inevitable part of the many international and domestic legal framework that arrange the relationship between the principal<sup>4</sup> and carriers by using electronic means of doing business. Hence, when validity of the statement (*contract statement*) depends on written form of contract, the condition is accomplished if the statement is given in electronic form.<sup>5</sup> On International level, *Model Law on Legal Aspects of Electronic Data Interchange and Means of Communication* is applicable on all form of data interchange including transfer of bill of lading, by „data message“<sup>6</sup> (*United Nation Commission on International Trade Law (UNCITRAL)*).

Further, the most applicable is *CMI Rules for Electronic Bills of Lading 1990, Project Bolero (Bills of Lading for Europe)*, *Carriage of Goods by Sea Act (1992)*, *The Utah Digital Signature Act*

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<sup>2</sup>Ferguson D M., Hill N.C., Hansen J.V., “Electronic data interchange: foundations and survey evidence on current use,” *Journal of Information systems*, Vol. 4, 1999, pp. 81-91.

<sup>3</sup>Chow H.K.H., Choy K.L., Lee W.B., A strategic knowledge-based planning system for freight forwarding industry, *Expert Systems with applications* 33 (2007), p. 937.

<sup>4</sup> Principal in obligations represent one of the party in order contract. By one order contract, the party accepting the order shall undertake the obligations to the orderer to carry out specific transactions to his account (LOO, art. 805/1).

<sup>5</sup>Referring to this issue (*using electronic data interchange in implementation of customers acts*), Norwegian Legal system in 1988 implemented EDI concept in order to simplify the work of freight forwarders and transporters. Norwegians also implemented TVINN system which effectiveness is shown in reduction of business cost and timeline for customs procedures. See more about this in: Hellberg R., Sannes R., Customs clearance and electronic data interchange – A study of Norwegian freight forwarders using EDI, *International Journal of Production Economics*, Volume 24, Issues 1-2, November (1991), p. 100.

<sup>6</sup>„Data message“ represents information acquired, storage and transmits by electronics, optical and similar means, but not limited to EDI network mail, telegraph, telex etc.

(1995), *The Australian Sea-Carriage Documents Bill* (1996).<sup>7</sup> Using the EDI system in transport and shipping industry creates many innovations. Hence, the question of benefits is imposed taking into account EDI system in transport. Analogous with the question of benefits, the question of borders in implementations are becoming part of this issue.<sup>8</sup>

The implementation of EDI system in freight forwarding and transport industry is perceived on a different ways. Some of the authors are on the opinion that EDI system is a necessary part of shipping, and its *conditio sine quo non* for business survival.<sup>9</sup> Others established the concept of “*no choice*,”<sup>10</sup> which means that implementation of EDI system provide the response on the question: *which of the freight forwarders will survive?! Third category of legal advisors emphasize that the benefit of EDI system depends of requirements of the clients in shipping industry.*<sup>11</sup>

It seems that the last ascertainment is the most logical conclusion. Empirical research that we made for the need of this issue, present a different data for EDI and its role in shipping industry. The results of *Crum and Allen study*, showed that (1991)<sup>12</sup> the base of integrating EDI system in shipping industry is in the sentence: “*meet shipper requirement and improve customer service*”. On the other hand, exploration in this issue showed that shippers don’t do any type of pressure for implementation of EDI system. All they want is refer to quality and fast services that generally is based on data interchange system. Implementation of EDI system is closely related with the measures of companies in any phase of transport route. In fact, the benefits of EDI system are effective if companies implemented it in all phases of supply change system.

Conducted research also showed that implementation of EDI system exposes the company on large costs. In this context, the research of Johnson (1992)<sup>13</sup> shows that freight forwarders implemented EDI system because of the competitions advantages regarding the speed of transmission of informations, reductions of costs for gating informations. On the other hand, in his research Johnson emphasize certain limits in direction that requirement of shippers for EDI communication is not on a high level, or that the ascent is on the *hard copy* documentation. This results from the lack of confidention in electronic communication and uniformed standards for use of EDI system.

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<sup>7</sup>Види повеќе: Livermore J., Euarjai A.K., Electronic Bills of Lading: A Progress Report, *Journal of Maritime Law and Commerce*, Vol. 28, No. 1, January, 1997, p. 55-59.

<sup>8</sup>For analysis and elaboration of this issue we will use a few American cases conducted on the freight forwarders and transporters and their clients.

<sup>9</sup>Lambert [1998] во Murphy P.R., Daley J.M., EDI benefits and barriers, Comparing International freight forwarders and their customers, *International Journal of Physical Distribution & Logistics Management*, Vol.29, No. 3, 1999, pp. 207-216.

<sup>10</sup>Ozsomer A., Mitri M., Cavusgil S.T., Selecting International freight forwarders: an expert system application, *International Journal of Physical Distribution and Logistics Management*, Vol.23 No. 3, pp.26-36, available from: <http://www.emeraldinsight.com/search.htm?st1=Selecting+International+freight+forwarders%3A+an+expert+system+application&ct=all>, [accessed 01 November 2010].

<sup>11</sup>Murphy P.R., Daley J.M., op. cit., pp. 207-216.

<sup>12</sup>Crum M.R., Allen B J., The changing nature of the motor carrier-shipper relationship: implication for the trucking industry, *Transportation Journal*, Vol. 21, No. 2, pp. 41-55, available from: <http://www.emeraldinsight.com/search.htm?st1=Crum+M.R.+and+Allen&ct=all>, [accessed 01 October 2010].

<sup>13</sup>Johnson D.A., Allen B J., Crum M.r., The state of EDI usage in the motor carrier industry, *Journal of business logistics*, Vol. 13 No. 2, 1992, pp. 43-68, available from: <http://www.emeraldinsight.com/search.htm?st1=The+state+of+EDI+usage+in+the+motor+carrier+industry&ct=all>, [accessed 01 November 2010].

Referring to this issue, research in the field of *just in time delivery* was made by Banerjee S., and Golhar D.Y (1991).<sup>14</sup> In this context is the resonation that: JFT companies have bigger benefitions comperated with companies that don't have just in time delivery system. The benefitions refers to bigger control of the data and reduction of office mistake on the base of EDI system. On the base of the mentioned conclusions from the research, it is very clear which are the benefits and bounders of EDI system.

Finally, nevertheless of the fact that this research is done on the beginning of nineteen, practice still present that lack of implementation of EDI is based on the lack of confidention in it. Newest research shows <sup>15</sup> increasing usage of electronic interchange with one obstacle that refer to electronic bill of lading in sea transport. In this filed important efforts are made referring the issue of bill of lading. The biggest dilemma refer to the negotiability of the transmission of bill of lading. This is case because of the character of the bill of lading as a document of title. The whole implementation of EDI system is conditioned by many factors. First of all is the requirement of the clients. In this direction one of the manager of *Customs and Facilitation Institute of the International Federation of Freight Forwarders Associations (FIATA)* Sandro Consoli empfasize:<sup>16</sup> The most important question is: will the shippers accept the digitalization of shipping documentation. If the client want a piece of paper, we'll gave him, against we'll lose it. Finally, confidention and protection of cargo interests is essential for development of EDI system.

Nevertheless, our opinion is that arrangement of electronic bill of lading in legal frame, contribute to improvement of confidention of the clients, which means that the unsuccessfulness is not due to the practice only. This is very reasonable, because any new concept born in practice, must be support from legislation. This is how the concept works as useful instrument for clients.

## **2. Dematerialization of shipping documentation**

World business community attempts to dematerialize shipping documentation for a couple of decades. This is very logical and opportunistic act, if we take into account the benefices that generate from EDI system in international trade. Hence, the speed of issuing bill of lading, *transmission and full procesualization of shipping documents*. More accurately, the process of digitalization in the field

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<sup>14</sup>Banerjee S., Golhar D.Y., EDI implementation: a comparative study of JIT and non JIT manufacturing firms, *International Journal of physical distribution and logistic Management*, vol, 23, No. 7, 1993, pp. 22-31, available from: <http://www.emeraldinsight.com/search.htm?st1=banerjee%20S.,%20Golhar%20D.Y%20EDI%20Implementation%20&ct=a ll&>, [accessed 31 October 2010].

<sup>15</sup>Lee S M., Lim S B., Soriano D R., Suppliers' Participation in a Single Buyer Electronic Market, *Group Decision and Negotiation*, Volume 18, Number 5, 2009, pp. 449-465, available from: <http://springerlink.metapress.com/content/g3665q3374507126/fulltext.pdf>, [accessed 01 November 2010].

<sup>16</sup>[Freudmann A] bo Dubovec M., The Problems and possibilities for using electronic bills of lading as Colletaral, *Arizona Journal of International & Comparative Law* Vol. 23, No. 2 2006, p. 438-466.

of trade and transport is reflected in reduction of paper costs, time consuming and protection of the documents.<sup>17</sup>

Using the e-communication create unsolved issues for E/B/L.<sup>18</sup> This's a case because of the specific characteristic referring to negotiability, transmissions and representation of the goods. In all other fields of transport, electronic communication, *charterer documents*, *non charterer documents* (*booking note*, *booking confirmation slip*), *transport documents* (*mate's receipt*, *sea way bill*) are part of any transactions.

Implementation of EDI system is fully recognize in transport sector, except in the field of *maritime bill of lading*. As a document of title, bill of lading require presentation of original example of the bill of lading. This is specially fact because copying of bill of lading is easily, and this transport document create uncertainty, and the companies don't act in massive use. There are many systems that present attempt for fully implementation of Edi. Any of this systems is presented as the best, but also many critics are addressed of any of them: Bolero Electronic Trade System, Seadocs ETS, and Trade Card ETS. Generally, the biggest critics are addressed on the instability of during the realization of transactions. In correlation with CMI Rules for Electronic Bills of Lading, 1990,<sup>19</sup> critics are addressed on the liability of transporter, freight forwarders and status of EBLs.

Electronic bill of lading is regulated with *CMI Rules for Electronic Bills of Lading*, 1990.<sup>20</sup> Namely, computerization of securities generate a real "technological revolution" in the field of business practice and emission of securities.<sup>21</sup> The question of using electronic bill of lading is a result of expansion of electronic data change in the air of transport. In modern conditions of transport sector, transport document contains more documents with many data that complicated defining of the content and create great judicial procedures, or abuse. Because of this risk, in legal literature, many authors are sceptic about application of B/L in electronic form.

Legal literature dispose with many theoretical standpoints?! Finally, after several years of discussion using Electronic bill of lading in sea transport is regulated in CMR Convention under European Commission of OON for Europe.

Bill of lading has a basic role in transport sector and it has three established roles in theory and practice:

- *receipt for the goods shipped or received for shipment*
- *evidence of the contract of carriage, but not of the contract itself*

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<sup>17</sup>Laryea's research shows that on world level, the costs for paper used in international trade is 7 % of 6 trillion dollars in whole world trade, or, \$420 billion a year.. See: Laryea E.T., *Paperless Shipping Documents: An Australian perspective*, 25 *Tul. Mar. L.J.* 2001, p. 255-298.

<sup>18</sup>In this context, see: [http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/1998\\_2/livermore/#a3.5](http://www2.warwick.ac.uk/fac/soc/law/elj/jilt/1998_2/livermore/#a3.5), [accessed 31 October 2010].

<sup>19</sup>See: <http://www.colaw.cn/findlaw/marine/eb1.htm>, [accessed 31 October 2010]. In this context, see: Dube J., *Canadian Perspectives on the Impact of the CMI Rules for Electronic Bills of Lading on the Liability of the Carrier Towards the Endorsee*, 26 *Transp. L.J.* 107 (1998-1999), p. 107-116, available from: <http://heinonline.org/HOL/LandingPage?collection=journals&handle=hein.journals/tportl26&div=10&id=&page=>, [accessed 31 October 2010].

<sup>20</sup>Види: <http://www.colaw.cn/findlaw/marine/eb1.htm>, [accessed 11 June 2010];

<sup>21</sup> Vasilovic, M., op. cit., p. 357.

- *a document of title so that the right of possession of the goods can be transferred by transfer of the bill of lading.*

The third function was first recognised by the courts in *Lickbarrow v. Mason*<sup>11</sup> and it means that by transferring the paper bill of lading the right of possession of the goods represented by it is transferred. This “transferability”, respective to the degree of transferability of the bill of lading, depends on the form the bill of lading is issued in. It might be issued “to order” of the shipper or in blank, then it is transferable by endorsement or by naming a consignee. The other possibility is to issue the bill of lading with a named consignee without any option “to order”, then the bill of lading is non-negotiable or “straight” and as a consequence it lacks the transferable function.

The bill of lading in its function as a receipt for the goods shipped or received for shipment is under the Hague-Visby rules<sup>6</sup> *prima facie* evidence as to the quantity, the condition and, possibly to the quality of the goods.

The system of the paper bill of lading requires that the goods are delivered at the port of destination only against the presentation of the document, or to be more exact one of it’s usually issued three originals. The purposes of this system are on the one hand to protect the holder of the bill of lading from misdelivery, and on the other to give the carrier certainty about the person being entitled to claim the goods, especially after the bill of lading has been negotiated once or more often.<sup>22</sup>

### **3. Advantages and disadvantages of SeaDocs, Bolero, Global Trade system n TradeCard**

Exploration of four mentioned systems of transfer of bill of lading is a classic example of the fact how easy is to show that any established system may not experience the light of the day, exactly because of the rejection of the trade community. Any of this system is relies on a different basis. Versus Bolero and SEADOCS which are based on the use of negotiable bill of lading, Global trade system and TradeCard are using non-negotiable confirmation for receipt.

Bolero and SEADCOs system which are based on transmission of negotiable bill of lading, and existence of confidence<sup>23</sup> do not exist. More accurately, Bolero system get its support only by the member of the association, but not from the whole business community – lack of support from business sector. These systems are not uniform regarding documents that should be sign. This is against acceptance of the system, because the requirements of the business are uniform and standardization. Further, distinction also exists regarding the fact the Bolero system doesn’t protect finance, otherwise stated, it is unacceptable for the banking sector. Against this background, Banks fully support TradeCard and GlobalTrade. On the other hand, TradeCard and GlobalTrade operates

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<sup>22</sup> See for this number for example the homepage of the ttclub at <http://www.ttclub.com> and the report of Beatrice and Robin Arnfield, Opportunities and Challenges for Banks in Business-to-business E-commerce, p.2, citing an UN study, the report is available at [http://www.bolero.net/overview/what\\_say/articlep2.php3](http://www.bolero.net/overview/what_say/articlep2.php3).

<sup>23</sup>Chandler G F., The Electronic Transmission bills of Lading, *Journal of maritime Law and Commerce*, Vol, 20, No 4, 1989, pp. 571-580.

as a trade department of the bank, using automatic examination of the documents (*replacement of the automatic with manual calculation*) regarding the documents that electronic letter of credit is require.

In correlation with this, UCP are supplemented in part that document present any hard copy and electronic document, which mean that this two document have equal legal regime. In this direction, electronic paper/bill of lading presented at the bank are perceived as original documents. Namely, there is no legal and technical barriers to electronic communication regarding the issuance of letter of credit. In private sector, banks that have established certain canals in electronic communication practices to issue e/b/l. In this context, one of the most important question is: what is the scope in which banks realize electronic communication. Namely this is banks practice when we discuss documents with status of documents of title. These documents are exposed on great danger of being abuse. TradeCard in this segment has a great respect.<sup>24</sup> But, nevertheless of other advantages and disadvantages, practices is not yet in the position to fully realize implementation of e/b/l.

Finally, none of these system did not solve the question about transmission of transport documents of title. Despite this, it seem to us that using the E/B/L do not pose a risk that is much greater than the risk from paper B/L. So, we fully support implementation of E/B/L.<sup>25</sup> Even, we agree with the fact that perfect system is not established yet. Any of presented are with certain advantages and disadvantages.

## **Seadocs**

The central element of SeaDocs was the Chase Manhattan Bank acting as the central registry and as agent for all parties involved. All of the activities between principal and carrier are conducted by Chase Manhattan Bank. SeaDocs worked on the way that:<sup>26</sup> *The carrier issued to the shipper a paper bill of lading, which was at once deposited with the bank. In exchange for the paper bill of lading the shipper received a code, similar to a commonly known personal identification number (PIN); When negotiating the deposited bill the shipper (= seller) had to notify SeaDocs of the endorsee's (buyer's) name. The shipper would also provide the buyer with a portion of the code originally issued to him. Both parties then had to notify the registry of the purchase.*

The SeaDocs registry then first tested the message received from the seller before entering into any communication with the endorsee (=buyer). After the shipper's message passed the test SeaDocs tested the message received from the endorsee (= buyer) and accepted it if it contained the portion of the shipper's (=seller's) test key. By these checks it was ensured that the correct messages had been received. When compliance with the checks was confirmed the name of the new owner of the bill was recorded in the electronic registry as well as entered on the paper bill of lading deposited with the bank.

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<sup>24</sup>Dubovec M., op. cit., p. 458.

<sup>25</sup> See more about this, Tusevska B., Freight forwarders in international and domestic goods, Skopje, 2009, p. 242.

<sup>26</sup> See more about this in: Chandler, JMLC 1989, p. 574, fn. 7.



When the goods arrived at the port of discharge SeaDocs would have already transmitted an identifying code number to the carrier as well as a similar code to the endorsee or owner of the goods currently recorded in the registry and on the paper bill of lading.

Using the identifying code number the last recorded endorsee could claim delivery of the goods from the carrier who could check the authorization of the endorsee by comparing it with the code issued to him.

## **Bolero**

Bolero is a project of the European Community in the early 1990's and is still current, now perhaps more than ever, as it has been commercially in force since September 27th 1999 more than one and half years. Since its first steps as an experiment it was of interest to various parties involved in the documentation of transport of goods by sea, and its development to commercial application was the reason to make Bolero the subject of this work.<sup>27</sup>

What a message to be sent on the Bolero system 'looks' like, that means, of what components it consists, is described in the Rulebook Appendix. The message as a whole has a header, which contains mostly that information which is known from usual email headers as well, which is not surprising as the Bolero messages are a special form of email. Accordingly the route of the message is shown (To and From which address it has been sent), its content type and subject.

The body of the message consists of parts into which it is divided according to the MIME – Standard. Each part in turn contains a general header determining the content and type of that message part to pass it through email-channels. Each part of a message also has a Bolero Header containing data specific to the Bolero system and necessary to process it through the Bolero System. The data is tagged in accordance with the Extensible Markup Language (XML). Then the message itself, consisting of one or more documents, for example the digital signature, follows.

Each document/part of the message is introduced by a message part header. Documents might also be attached, which would be the case when a BBL Text / instruction concerning it is sent to the title registry. The form of these documents is also prescribed by the MIME standards. The last part of a Bolero message indicates the end of that message and consists of a line with a single dot.

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<sup>27</sup> Hare, J.E., New attempts at electronic documentation in transport, University of Cape Town, 2009. p. 15.

## **CONCLUSION:**

Despite all the critics addressed to all these system of transfer of bill of lading, we cannot deny that electronic transmission of bill of lading has a great meaning in international transport. It is an inevitable stage in the transfer of goods so the question is which of the system is the surest, or which is the right concept of transfer established in a new system of transfer.

Bolero Electronic Trade System, Seadocs ETS, Trade Card ETS operate on their own way and realize all the legal quality of the bill of lading. The more important question about implementation of bill of lading is: do the government accept the electronic bill of lading, or do they have a legal frame that regulate electronic transfer of B/L in the sea and other types of transport. In this direction, Australia in Sea Carriage Documents Act 1996, Australian COSGA 1991 and Electronic Transactions Act 1999. Australian legal system prescribe legal effects of the shipping documentation.

It seem to us that all of the government should support this concept in legal sense and practices will decide which system is the best. Anyway, intervention in any domestic legislation become inevitable because of the International community and Rotterdam Rules. These rules are incorporated by reference into these contracts covered by BBL's in order to replicate the same legal system, which is applicable on paper bills of lading. Clause 3.2.(4) of the Rulebook reads: "International Conventions.

A contract of carriage in respect of which the Carrier has created a Bolero Bill of Lading shall be subject to any international convention, or national law giving effect to such international convention, which would have been compulsory applicable if a paper bill of lading in the same terms had been issued in respect of that contract. Such international convention or national law shall be deemed incorporated into the Bolero Bill of Lading. In the event of a conflict between the provisions of any international convention and the other provisions of the contract of carriage as contained in the BBL Text, the provisions of that national law or that international convention shall prevail."

Finally, we leave space for engineers to offer a system which contains lack of disadvantages regarding the transfer of E/B/L.

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