

# IEEE Magnetics Society Newsletter

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**Martha Pardavi-Horvath, Editor,  
Romney Katti, Publicity**

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## Message from the President

- Message from Robert Fontana, Jr., IEEE Magnetics Society President
  - Coming soon...!

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## CHAPTERS CORNER

by Dr. Richard H. Dee, Magnetics Society Chapters Chair

**Question:** How do I *form a local chapter*?

**Answer:** It only requires twelve members of the Magnetics Society to form a local chapter. File a petition with twelve signatures of members using the form at: [http://www.ieee.org/organizations/rab/scs/socchap\\_form.html](http://www.ieee.org/organizations/rab/scs/socchap_form.html) and it happens!

**Q:** How does the chapter get money to help with *local expenses*?

**A:** In addition from the “dues” you get from your section each time you meet, there is a small budgeted amount that the Magnetics Society has for chapters that I can help distribute on an as-needed basis. If you have a specific need that your normal fund raising efforts cannot cover let me know the details and I’ll do my best.

**Q:** Is there any benefit to encouraging members to become *senior members* of the IEEE?

**A:** YES! Each chapter and section gets \$10 for every member elevated to Senior Member Status although this can vary depending on individual society and local section arrangements. Check with your section secretary for details in your area. Gaining senior membership is good for the profession, section, chapter and personal recognition. Chapters and members with senior member credentials are encouraged to get the applications in for this increase in membership status. The website below has the information and forms you need.

<http://www.ieee.org/organizations/rab/md/smforms.htm>

**Q:** How do I get the *distinguished lecturers* to come to my town?

**A:** You simply contact them directly, by e-mail, phone, or mail. Their contact information is on the MagSoc. web page and also at:-

<http://www.iecemagnetics.org/distlect/distlect.html>

The last question above addresses the fact that chapters do not seem to be taking full advantage of this program. In the last year, only 4 or 5 of the 19 chapters have invited these lecturers (e.g. see UKRI Chapter News below). The Magnetics Society covers their travel expenses, so all you need to do to get these excellent speakers to visit your chapter is to contact them and arrange a date!

## **NEWS from the United Kingdom/Republic of Ireland Magnetics Chapter**

By *Barry Middleton*

The Magnetics Chapter has continued to serve its membership through its policy of organizing meetings supporting the IEEE Distinguished Lecture Program, jointly sponsoring selected national meetings and events, and organizing meetings specifically for its own membership. This year we were pleased to contribute to the organization of a sequence of outstanding lectures given in various parts of the country by Distinguished Lecturer Tom Silva of NIST. We also joined with the UK Magnetics Society to co-sponsor the Joint Magnetics Workshop, held over three days at the University of Wales, Cardiff. This was a major national event providing opportunity for the whole UK magnetics community to come together and present its work. It attracted approximately 150 attendees. A one-day technical meeting is planned for later this year, for which details are yet to be finalized. But the distinguished 'Wohlfarth Lecture' traditionally arranged in December to take place at the Institute of Physics Condensed Matter and Materials Physics Conference will now take place at a later date in April 2002.

### Recent Past Events

IEEE Distinguished Lecture by Tom Silva of NIST.

'Consideration of the Spherical Cow: The Realities of Magnetodynamics in an Imperfect World'

14 May 2001, University of Exeter, 23 attendees (including 6 IEEE).

16 May 2001, University of Manchester, 16 attendees (including 5 IEEE).

17 May 2001, University of Durham, 12 attendees (including 4 IEEE).

18 May 2001, University of Glasgow, 25 attendees (including 4 IEEE).

9-11 July 2001 Joint Magnetics Workshop (Joint with UK Magnetics Society), University of Wales, Cardiff, approximately 150 attendees (approximately 20 IEEE).

### Awards

IEEE Certificate of appreciation to B K Middleton 'In Recognition of Outstanding Leadership as Chapter Chair During the Year 2000'.

### Forthcoming Events

'Magnetic Recording and Recording Materials'. One-day meeting joint with the EPSRC Magnetic Data Storage Network. Details to be decided.

'Wohlfarth Lecture' at the Condensed Matter and Materials Physics Conference, Brighton, 7-11 April 2002.

***B K Middleton***

1 October 2001.

If you are the local chapter chairman and would like to share what's happening in your chapter and local area (e.g. talks, people activity, magnetics news, company or university news etc.), please forward a paragraph (or two), a picture, a reference to a interesting article or something inventive or newsworthy (in your opinion) to me at [r.dee@ieee.org](mailto:r.dee@ieee.org) so we can include in the next MagSoc newsletter.

\*\*\* NOTICE TO MAGNETICS SOCIETY CHAPTER CHAIRS \*\*\*

Could you please update you contact information for me. I've noticed several e-mails bounce back implying that you've moved (at least email addresses). Let me know at [r.dee@ieee.org](mailto:r.dee@ieee.org) so we can still communicate.

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## **[Nominations Sought for 2002 Achievement Award of the Magnetics Society](#)**

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## **MAGNEWS**

Do you have an exciting new achievement?  
Please share the news with us!

This is the place to inform the magnetics community about a new discovery, great achievement, and/or theoretical or experimental breakthrough in magnetism that is worth sharing in brief.

Submit a 100-word-long (maximum) description about your new results and what is worthy of note – pictures are welcome!  
– to the Editor: [pardavi@ieee.org](mailto:pardavi@ieee.org)

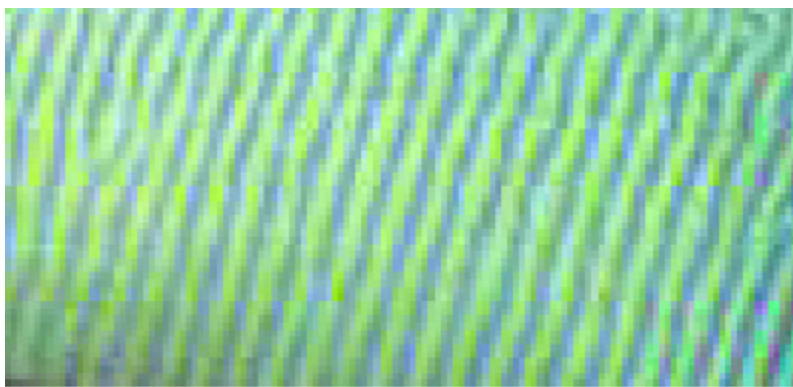
*Sorry, this is NOT the place for product descriptions or advertisements.*

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## **Visual Magnetics**

What is this?



Go to the end for the answer...

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# Conference reports

## *SMM15*

*September 2001, Bilbao, Spain*

The 15th, Conference in the biennial series of the Soft Magnetic Materials series was held 5-7 September, 2001, at the University of the Basque Country, Bilbao, Spain. Over 200 delegates from 26 different countries attended the event, which, as usual, covered a wide range of developments in the production, properties, and applications of soft magnetic materials in the following topics:

1. Production and processing
2. Magnetic characterization of materials
3. Magnetization processes, domains
4. Dynamics, relaxation and losses
5. Simulation and design
6. Electrical steel
7. Soft magnetic alloys
8. Ferrites and other oxides
9. Power applications
10. Electronic and high frequency applications

Invited papers covered magnetic materials for article surveillance, low-loss grain-oriented electrical steels, GMI in microwires, review of magnetic measurement methods related to soft magnetic materials, scope for material production by spark erosion methods, sintered and ferrite material developments, improved non-oriented electrical steels, developments in 2D magnetic measurements on electrical steels, high-frequency properties of multilayers, electromagnetic design simulations for industry, magnetization properties of granular bimetallic systems. This was backed up with around 300 poster and oral presentations, many of which emphasized industrial and applications aspects of these themes.

The conference provided an excellent forum for academic and industrial delegates to learn from each other and discuss recent advances in magnetic materials, this ensured that the conference maintained its unique theme set up and developed over the last 30 years.

**Dusseldorf, Germany**, has been chosen as the venue for the next *SMM16* Conference which is to be held in two years.

### **For further information:**

#### **Professor Manu Barandiaran,**

*Chairman* of the Conference

Dpto de Electricidad y Electronica

Universidad del Pais Vasco UPV/EHU

Apartado 644

48080 BILBAO (Spain)

Tel/FAX: +34-9460-12549/13071

[manub@we.lc.ehu.es](mailto:manub@we.lc.ehu.es)

#### **Professor Tony Moses,**

*Chairman*, International Committee of the SMM,

Wolfson Centre for Magnetic Technology,

Cardiff University, PO Box 925

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[vermeulent@cf.ac.uk](mailto:vermeulent@cf.ac.uk)

## *SMM15*

*September 2001, Bilbao, Spain*

**SMM16**  
**2003, Dusseldorf, Germany**

**FIRST SEEHEIM CONFERENCE ON MAGNETISM**  
**September 9, 2001 - September 13, 2001**  
**Seeheim, Germany**

A conference series on magnetism was organized under the auspices of the **Darmstadt University of Technology** and **Ulm University**.

The First Seeheim Conference on Magnetism (SCM2001) was held from September 9 to 13, 2001, at the Lufthansa Training Center in Seeheim, located conveniently in Central Germany and easily accessible by air, train and car. We selected Seeheim as the location in the hope that it would help to create an informal, friendly and productive atmosphere among the researchers from throughout the world.

SCM2001 was focused on the latest developments in specific fields of magnetism (**nanstructured materials, surfaces, interfaces and nanoparticles**) and covered fundamental aspects of magnetism as well as applications. The most recent results were presented in the form of invited and contributed talks and posters.

There were 196 registered participants from 36 countries, representing academic institutions and industries. A total number of 200 papers, correlating nanostructured and magnetic properties, were selected for presentation. Throughout the whole meeting a total of 71 talks were given and the remaining 129 papers were scheduled for poster presentations. In the session on magnetism of nanomaterials, a large number of papers were received- a satisfactory result that fulfilled the purpose of the meeting. In order to have more discussion among the researchers from different fields, the topics were not strictly divided according to subjects.

The Topics areas were :

- HARD AND SOFT MAGNETIC MATERIALS
- MAGNETIC INTERACTIONS
- MAGNETIZATION PROCESSES
- SPIN-DEPENDENT TRANSPORT PROPERTIES
- NANOSTRUCTURED MATERIALS
- APPLICATIONS

The proceedings of the conference will be published in the journal "**Physica Status Solidi**" as a regular issue in January, 2002. We are looking forward to welcoming again all the participants of **SCM2004** at the second Seeheim conference on magnetism, planned for 2004 at Seeheim.

**M. Ghafari**

[ghafari@tu-darmstadt.de](mailto:ghafari@tu-darmstadt.de)

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## **CHAPTER ANNOUNCEMENTS**

**EUROPEAN INTERMAG2002 Letter from the Conference Chairman, Cock LODDER**

Dear Colleagues,

The European Intermag2002 will be held at the RAI Conference Centre, Amsterdam, The Netherlands from Sunday, April 28th until Thursday, May 2, 2002.



# Intermag Europe 2002

## Amsterdam

### The Netherlands

#### April 28 - May 2

You are invited to join this meeting and all relevant information is periodically up graded on our website:  
<http://www.intermagconference.com>

#### *About Amsterdam City*

It was in 1275 that Amstelledammme was first mentioned, named after the dam built in the river Amstel. In 1300 Amsterdam received civic rights and its citizens won the right to their own judiciary, laws and city government. Fishing and particularly the grain trade quickly brought great wealth to the city. The period from 1580 to 1720, known as the golden age, was the most significant one in Amsterdam's history.

The city's prosperity in the golden Age was also a great stimulus for art and culture. Rich merchants were eager to be painted in all their finery, either individually or in massive group portraits which you now can view in the Rijksmuseum and the Amsterdam Historic Museum. Rembrandt was the most famous artist at the period.

Amsterdam is one of Europe's most historic cities, though it is young at heart. You'll notice its liveliness as you wander through the picturesque narrow of Amsterdam's centre, the oldest part of the city, criss-crossed by its dreamy canals, enjoying the relaxed atmosphere streets

Lean back in the comfort of your canal cruise boat and watch the beautiful old houses glide by. Along the canals you'll see the richly decorated old patrician houses and you'll be told about the several different sorts and the monuments you pass. You enjoy a unique view of the architecture of the old town from the canal boat, so step into one and watch seven centuries of history drift by.

More museums can be seen. If modern art appeals to you more, then you'll certainly want to visit the Stedelijk Museum. Is Vincent van Gogh attracting you more please visit the Van Gogh Museum which has over 200 of his paintings. The Rembrandt house can be visit as well This is the original house Rembrandt lives for more than 20years. More than 250 etches of him are exhibited. The famous Anna frank house is also open for the public. It is the place where the young Jewish girl wrote her diary The Maritime Museum contains one of the worlds finest maritime collections, including ship models charts. Flags and paintings. Amsterdam has much more to offer. Please look at the website.

#### *Flying in*

As many as 80 airlines fly to Schiphol International Airport, conveniently located in the heart of western Europe. On arrival, you can board a train carrying you directly to The RAI Station within less than 10 minutes. Also all hotels are connected with tram or metro connections. Detail transport information will be given on our website.

#### *VISA REQUIREMENTS:*

Foreign citizens must carry a valid passport and/or visa to enter the Netherlands. You can contact the Dutch Embassy in your country for more information. Please do this well in advance, since a **visa application can take up to three months!**

If you need a personal letter of invitation to attend the conference, please contact Courtesy Associates. Be sure to provide your complete mailing address so that a signed letter of invitation can be mailed to you via standard mail service. Please note that the InterMag Conference cannot contact or intervene with any Embassy of the Netherlands or Consulate office abroad on your behalf.

#### *HOTEL ACCOMMODATION:*

The RAI conference centre does not have its own hotel accommodation. Reservation of the official conference hotels, with



discount, can be booked through the RAI Hotel Service. For the Intermag 2002 participants more than 700 hotel rooms have been reserved in various price categories. Hotel information and booking details will be given at the Intermag Europe website on November 1st, 2001. ***Because the conference period includes the Queens day celebration at April 30th it is advisable to reserve your hotel accommodation as soon as you can. This day is a national holiday there will be many tourists in Amsterdam looking for accommodation as well.***

### ***Advanced registration***

Advanced registration will be open, with the form posted on the web site, by January 1, 2002. Advance registration will be closed, i.e. the registration web site will be closed, on April 5, 2002. Following that date, all registration fees must be paid onsite at the conference itself. More information about the registration will be given on our web site.

### ***DIGEST SUBMISSION:***

The deadline for submission was October 17, 2001.

### ***MAIN SUBJECT CATEGORIES:***

1. **Magnetic recording**
2. **Magneto-electronic materials & applications**
3. **Soft magnetic materials & applications**
4. **Permanent magnet materials & applications**
5. **Magnetic thin films & nanostructures**
6. **Other magnetic materials & non-recording applications**
7. **Characterisation, imaging, modelling & theory**
8. **Other applications & interdisciplinary topics**

In addition to the contributed papers invited papers will be presented. There will be sessions where competing technologies can be assessed and, tutorial sessions, for less formal discussions of timely and/or controversial topics. In all of the above, special emphasis will be placed on application-oriented topics.

### ***Manuscripts***

Authors who submit digests for the conference should consider submitting full manuscripts for publication, but will not be required to do so. The INTERMAG papers are scheduled to be published during fall 2002 issue of the IEEE Transactions on Magnetics. Instructions for manuscript preparation will be given at our website and will be sent to authors of accepted digests. The submitted manuscripts will be subject to the usual review procedures of the Transactions.

The length limit will be three pages for contributed papers and six pages for invited papers. **The deadline for manuscript submission is **January 11th, 2002.****

### ***EXHIBITION:***

A technical exhibition of materials, services, instruments and literature will be held during the conference. If you or your company are interested in exhibiting or would like to receive additional information about the Intermag Europe 2002 Exhibition, please **contact** Dr. Martin Bijker, Exhibits Chair, e-mail: MBijker@otb.nl, Tel: +31 (0)40 2919 796 and Fax: +31 (0)40 2919 799 or look at our webpage from where you can download all relevant information.

### ***CONFERENCE SOCIAL EVENT:***

The social event will be a reception held at the Netherlands Maritime Museum at the heart of Amsterdam's characteristic harbour. One of the absolute highlights of the Maritime Museum is the exact replica of the VOC ship 'Amsterdam' dating from 1748. The 28 exposition rooms in the Netherlands Maritime Museum house a unique and priceless collection of paintings, drawings, ship models, instruments and other tools.

### ***FURTHER INFORMATION ON THE WEBSITE:***

<http://www.intermagconference.com>

*or Courtesy Associates*

[intermag@courtesyassoc.com](mailto:intermag@courtesyassoc.com) Tel/FAX: +1 202 973-8676/8722

The 1st North American Perpendicular Magnetic Recording Conference (NAPMRC, <http://www.napmrc.org>) will take place in Coral Gables, Florida on January 7-9, 2002. The conference will discuss the advantages, challenges, and timing of the transition to the perpendicular magnetic recording technology [1].

NAPMRC is held during the vitally critical times to the future advances in data storage technologies. As conventional recording schemes employed today are rapidly approaching the fundamental (superparamagnetic) limit in areal bit density [2], it is believed that perpendicular magnetic recording paradigm will enable to sustain the current great strides in technological advances for the next several generations of mass storage solutions. The technology is technically the closest alternative to conventional longitudinal recording, while it is capable of extending the superparamagnetic density limit beyond what is achievable with longitudinal recording.

NAPMRC will have a single session format with approximately 35 invited talks, which will be given by the world's leaders in perpendicular magnetic recording. Contributed papers will be presented at a special poster session. The invited papers will appear in the conference proceedings to be published in a special issue of *IEEE Transactions on Magnetics*.

Conference organization *support* is provided by Dr. S. Khizroev and Dr. D. Litvinov of Seagate Research in Pittsburgh in collaboration with Prof. J. Cohn and Prof. J. Ashkenazi of the Department of Physics of the University of Miami. NAPMRC is honorary co-chaired by Prof. S. Iwasaki of Tohoku Institute of Technology, Japan, and by Prof. S. Charap of Carnegie Mellon University. The conference is sponsored by the University of Miami and cosponsored/endorsed by the IEEE Magnetics Society, National Storage Industry Consortium, Materials Research Society, CMRR UCSD, CRISM Stanford, MINT U. Minnesota, and MINT U. Alabama.

The conference program was developed in close collaboration with the Advisory Board (<http://www.napmrc.org/organization.htm>). The conference program covers the state-of-the-art in the following subjects:

- Recording Heads
- Media
- Theory and Modeling for Perpendicular Recording
- Measurements and Characterization
- Recording Systems
- Channels for Perpendicular Recording
- Future of Magnetic Recording

More information at <http://www.napmrc.org>.

[1] S. Iwasaki and Y. Nakamura, "An analysis for the magnetization mode for high density magnetic recording," *IEEE Trans. Magn.*, vol. 13, p.1272, 1977. [2] S.H. Charap, "Thermal Stability of Recorded Information at High Densities," *IEEE Trans. Magn.*, Vol. 33(1), p. 978, 1997.

**EMSA 2002**  
**4th European Magnetic Sensor & Actuator Conference**  
Xenia - Helios Hotel, Lagonnissi Athens, 3-5 July 2002

### ***History***

In Autumn of 1995 the first meeting of the International Advisory Committee of the EMSA Conference took place in Chalkis, Greece. The final outcome was that the 1st EMSA Conference took place in Iasi, Romania. Following this successful Conference, the 2nd EMSA was organized in July 1998 in Sheffield, England, and the 3rd EMSA Conference in July 1998 in Dresden, Germany. Both attracted the interest of researchers and industry.

In Sheffield and Dresden it was decided that the 4th EMSA Conference is to take place in Athens, Greece. As a consequence, the National Technical University of Athens, has undertaken the responsibility of organizing the 4th EMSA Conference.

### ***Scope of the Conference***

The Conference will cover the fundamental and applied aspects in the field of magnetic sensors and actuators and their applications, giving an insight into the latest developments in this field, bearing in mind that the conference is not a commercial sensor event.



## ***Abstract Preparation***

Work that has been already submitted or presented is not suitable for presentation at the EMSA 2002 Conference. The abstract should be clear and concise, stating the specific results of the work, why it is important and how it differs from previous works by the authors or others. The maximum size of the abstract is one A4 portrait page.

## ***Important Dates***

- January 15th, 2002: Abstract Submission
- March 1st, 2002: Authors Notification
- April 1st, 2002: Early Registration
- June 1st, 2002: Paper Submission

<http://www1.metal.ntua.gr/emsa2002/EMSA2002.htm>

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# **IEEE MAGNETICS SOCIETY DISTINGUISHED LECTURERS 2001-2002**



Advanced Magnetic Materials and Transducers:  
Enabling Factors for the Digital Storage Explosion  
Shan X. Wang  
Stanford University



Advanced Magnetic Materials:  
Development and Micromagnetics  
Josef Fidler  
Vienna University of Technology



Ferromagnetic Resonance Force Microscopy:  
Probing Ferromagnets at the Micrometer Level  
Philip E. Wigen  
Ohio State University

See details at:

Details: <http://www.iecemagnetics.org/>

## **NEW IEEE JOURNAL:**

### **IEEE Transactions on Nanotechnology**

#### **Call for Papers (*Starting first quarter, 2002*)**

IEEE Transactions on Nanotechnology, sponsored by the Council on Nanotechnology, is a new archival journal devoted to dissemination of new results and discussions on nanotechnology, i.e., understanding the physical basis and engineering applications of phenomena at the nanoscale across all areas of science and engineering. By emphasizing the multitudes of disciplines at which nanoscale effects become important and unique properties are observed, and by bringing together the engineering applications at the boundaries of disciplines, the "Transactions" will strive to be a forum for cross-fertilization of ideas of multi-disciplinary interest.

The transactions will be available in paper and electronic format, and will be subject to the standards of IEEE and with a thorough independent review process. Papers are solicited in the theory and practice of the broad range of disciplines where the nanoscale effects are increasingly important. Some examples:

- Electronics - devices, circuits, architecture, and technology
- Magnetics
- Micromechanical systems
- Optics and optoelectronics
- Biological applications with electronics, micro-electro-mechanical systems, sensors, etc.
- Chemistry and applications to other disciplines
- Proximity probing and manipulation techniques
- Microwaves and RF
- Materials and their properties

Manuscripts should conform to requirements for regular papers or briefs (similar to those outlined on the inside back cover of IEEE Transactions such as the Transactions on Electron Devices).

Manuscripts can be submitted electronically through Manuscript Central of IEEE starting Feb. 1, 2002 (<http://www.ieee.org/ton/emanuscripts>). Prior to Feb. 1, please submit manuscripts to

**Prof. Sandip Tiwari**

Editor-in-Chief

**IEEE Transactions on Nanotechnology**

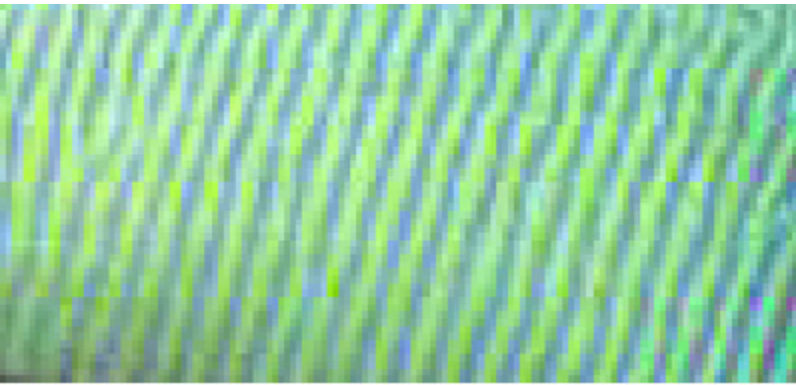
Department of Electrical and Computer Engineering

Cornell University

Ithaca, NY 14853

## **VISUAL MAGNETICS - SOLUTION**

Question: What is this?



.....a natural domain structure.

Is it the result of energy minimization???????

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