

Hohmann & Partner

Rechtsanwälte

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Inquiry Secretary
c/o Competition Commission
New Court 48
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United Kingdom

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Datum
23.01.04

Proposed acquisition by Carl Zeiss Jena GmbH of the microscopy business of Bio-Rad Laboratories Inc.

Dear Ms. Mary Peretz,

we are writing on behalf of Leica Microsystems U.K. Ltd. We have enclosed the power of attorney. The following version is a public version of the submission of 23 January, in which all business secrets are deleted; this version may be published.

The information given by Leica – especially those points indicated as confidential – are **strictly confidential** and must not be disclosed to any other parties without our consent. It appears to our client that the above mentioned acquisition will affect the market substantially, i.e. that it will lessen competition substantially. We will answer the questions addressed to our client as follows:

1. *Please see the attached diagram classifying advanced microscopy products. Could you say whether you think this is a correct classification and if not, how you would classify the products. Please then indicate with reference to the diagram which products your company currently produces (any marketing material on these products would also be helpful) and which products you believe are produced by Bio-Rad and Carl Zeiss.*

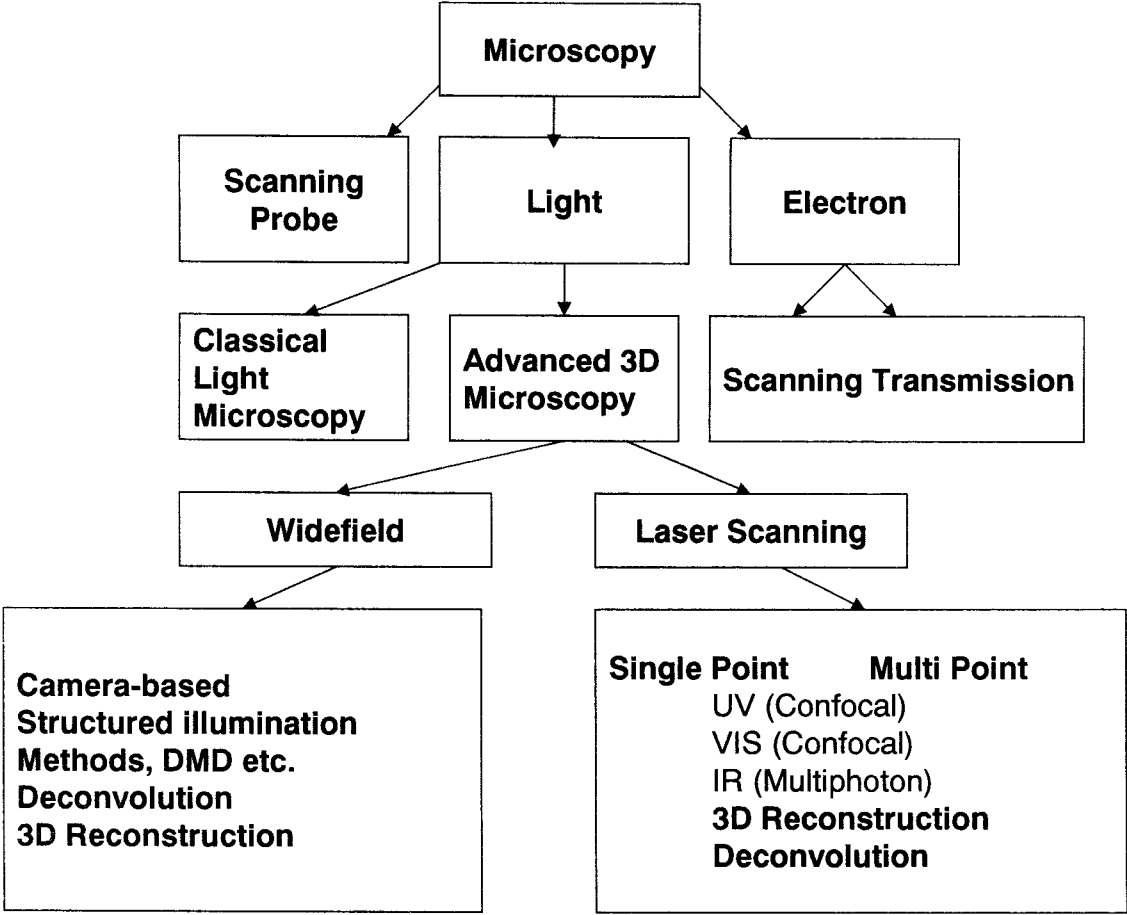
Kooperationspartner in / Co-Operation Partners in:

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Kto.Nr. 12 00 59 637, Sparkasse Wetterau (BLZ 518 500 79)

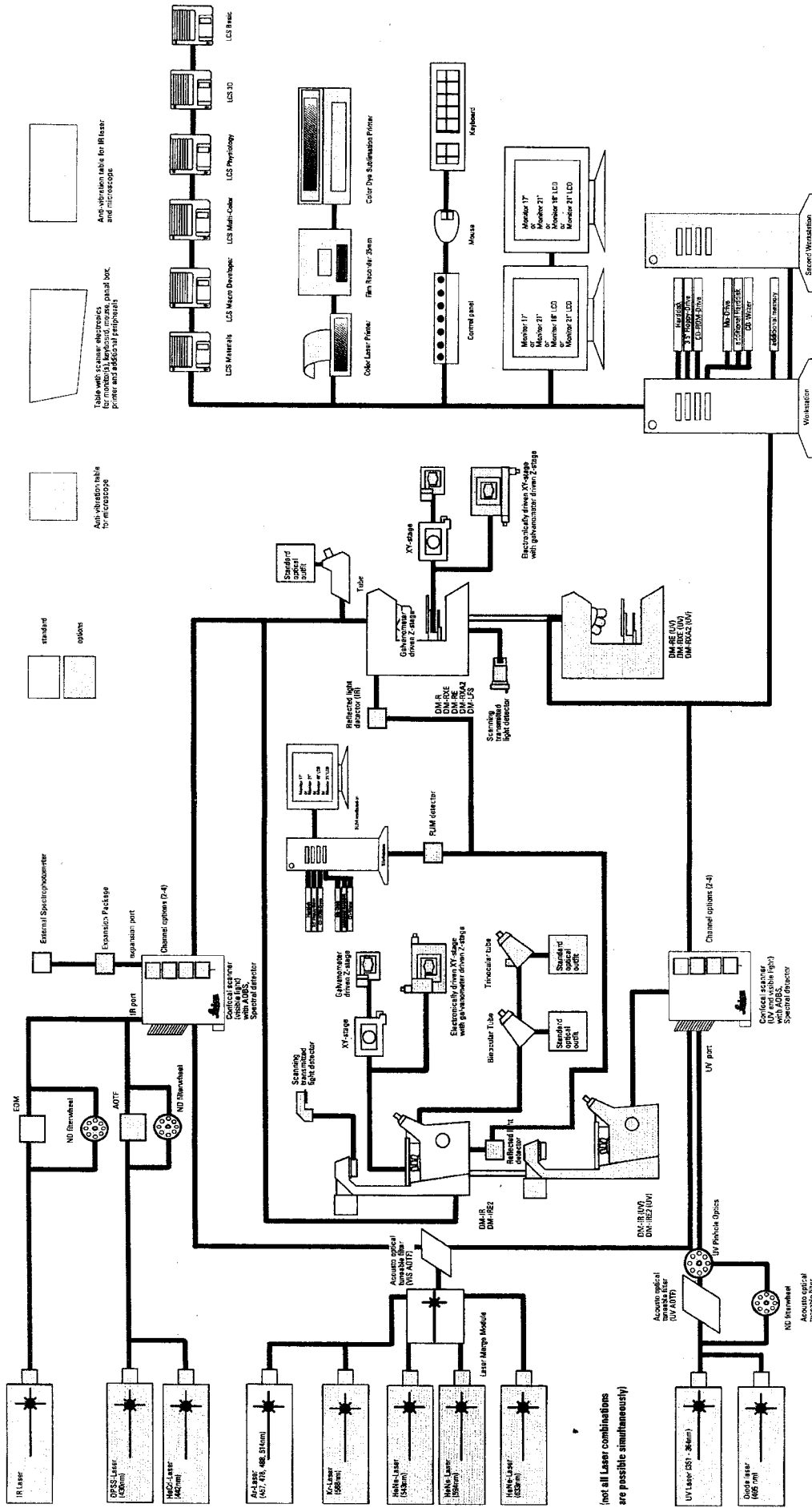
Partnerschaftsgesellschaft, Sitz Büdingen (Amtsgericht Bad Vilbel, PR 1353)

The diagram attached by you (Advanced Microscopy Diagram) contained several incorrect classifications (e.g. confocal microscopy contains also multi-photon microscopy; the differentiation between optical and non-optical was misleading). A correct diagram would be the following:



In order to demonstrate, that it is hardly possible to divide between single photons and multi photons, cf. the Leica Heidelberg GmbH Product catalogue: the IR (multiphoton laser) is just one of many laser options in the whole system:

Configurations



(not all Laser combinations are possible simultaneously)

2. *In addition please show for each type of product the applications to which it is suited (e.g. mineral analysis, living cells), and indicate how interchangeable these products are.*

Camera-based Widefield and Confocal Systems are available in two basic versions, which are differentiated by the camera type, microscope and software:

- Systems for Material Inspection and Analysis (mostly Reflection Microscopy)
- Systems for Biomedical Research (mostly Fluorescence Microscopy)

In Confocal Microscopy, the Systems for Biomedical Research are dominating the market (approx. 90 % of the market).

These Systems are not interchangeable.

3. *Please provide a list and contact details of your principle U.K. customers for advanced microscopy products. Could you also describe the uses of the equipment made by that customer?*

<**Answer deleted:** The diagram ("Principle UK Customers") is a **business secret** which must be kept strictly confidential>

4. *Please describe the factors which you think are important for customers and hence what is the nature of competition between suppliers (e.g. price, installation and service support, product characteristics, reliability, innovation, local operations, brand etc.).*

Price – Price is an important factor as most systems are purchased by means of European Tender (TED) because the majority of systems exceed the tender threshold of <**rest of answer is deleted, since it contains business secrets**>.

Installation – Professional installation by highly qualified Confocal Engineers is expected in this area. The installation typically takes two full working days.

Service Support – This is also an important factor in this business. Leica has a dedicated team of UK Engineers (4 in total) that service our UK customers. In addition, we have support from our colleagues based in Mannheim for top of the range Multi-photon installations, FLIM and FCS for example. Their service is done by air-flights, in order to give quick service support to the customers world-wide.

Product Characteristics – High quality, state of the art product characteristics are important. In essence, high optical resolution, light sensitivity, excellent sample axial

penetration, minimisation of photo-bleaching, excellent spectral resolution and efficient scanning speeds are the main requirements.

Reliability – Most of these systems are installed in multi-user laboratories. By definition many researchers have to plan their experiments to co-inside with their booked time on the confocal system very carefully. The reliability of the system is therefore critical. If the system is “down” for any reason it can affect the productivity of Research scientists who some times have only one chance to do a particular experiment.

Innovation – This market’s “life – blood” is innovation. If a company stops innovation it would dramatically affect its business in a short time. If the Zeiss acquisition of Bio-Rad moves foreword it would bar Leica innovating in the area of femto second imaging which is regarded within the scientific community as the key in the new area of multi focal multi photon imaging. The upgrading of single focus femto second multiphotons to multi-focus femto second multi-photons is of highest importance for the market (compare answer to question 12).

Local Operation – A strong Product Specialist team with good Engineering back up supported by office based customer care is also important and expected by our customers. We have a service team working inside the Great Britain, and a team working globally.

Brand – Yes, the brand name has large influence on our customers. Certainly Zeiss and Leica have strong brand recognition; Bio-Rad not so strongly. This means that if Zeiss acquire Bio-Rad the femto second technology would have more brand awareness and they would be able to capitalise on their strong market positioning.

5. *In particular, please outline the main characteristics of the service/on-site maintenance that you offer for your advanced microscopy products, say whether such service is automatically included or charged separately, and give an indication of the importance of service to your customers, the revenue to your firm and the expected life of a service contract. Also, if any of the servicing as contacted out could you please let us know to whom and how long the contract has been in place as well as a indication of the revenue from such a contract.*

A fully comprehensive warranty runs for 12 months and covers every system. In addition, we can offer options for a further three or four years fully comprehensive warranty on all parts and lasers. **<rest of answer is deleted, since it contains business secrets>**.

Maintenance and Support Leica offers a comprehensive Pre and Post Sales Support team.

The Team of 4 service engineers in the UK only work on Leica Confocal systems and are trained to the highest standards ensuring the latest service techniques and technologies are shared with all service personnel.

This not only enables us to supply a responsive service to meet our customer requirements, but also ensures that the high image quality is maintained for your Confocal System throughout its lifetime.

We now believe we have the most professional and comprehensive Confocal Service team in the UK.

Support Contact Details

Sales Support Hotline 01908 246293

Service Support Hotline 01908 246277

Sales / Service UK email address: Confocal.SupportUK@leica-Microsystems.com

..... **<rest of answer with contact details is deleted, since it contains business secrets>**

In addition, there is a dedicate support team in Mannheim, Germany, working internationally as a “fire-brigade”

..... **<rest of answer with contact details is deleted, since it contains business secrets>**

Location of Engineers

UK Map with Airport location to Engineer



Installation and commissioning

Systems will be carefully installed and commissioned on site by our team of Confocal Engineers in two days. As part of our Internal Quality Process our Engineers are responsible to ensure the system supplied passes our Initial Test Process standard that is laid down by the Business Unit in Germany. The test results from this are sent back to the BU and logged as reference to performance on site. (Copies of ITP can be supplied on request)

We also recommend that a Leica Service Engineer carries out a detailed site survey prior to installation of the equipment. Please refer to the attached pre-installation document for further details of system electrical and room requirements.

Level of Service

On receiving Sales order for Confocal System, the customer will be allocated one of our 4 Confocal Engineers as primary contact to manage all Service Activities from Installation process to field support for the lifetime of System.

In the event of Service request received by one of the above routes then this will be logged on our Service Data Base then passed to the primary Service Engineer to manage the problem through to completion.

If at any time this Engineer is unavailable then the next available Engineer from the group will be contacted. We believe continuity of Engineer expertise is mutually advantageous to both Customer and Leica, as increases Service efficiency and business rapport.

With the above Service structure, telephone support is guaranteed within 24 hours and for 90% of calls that require on site visit we endeavour to achieve a response time within 48 Hrs, and the remaining 10% we endeavour maximum response time of 72hrs.

Our UK Engineers are also given training on Application support, can carry out user Training on site if requested, therefore combining Service / Application support in one visit.

Spare Parts

Fast turning, critical items such as Lasers are held in our warehouse in Milton Keynes, and all other items are held in the Business Unit in Mannheim, Germany.

With our corporate Couriers, we are able to dispatch items with 24hr service direct to customer site all over Europe.

Training package

At this time training for the group will be provided by the team, which will include an initial basic training session immediately after installation, carried out by Engineer, followed by two more advanced training days with a recommendation of 4-6 users per day. The initial training includes general care of the system, acquisition, optimising and storage of data sets. Typically this is a one-day course. This is followed by two more advanced sessions provided by our team of Product Specialists that will include advanced 3D imaging and analysis, Time-Lapse acquisition, FRET. FRAP and FLIP

and advanced physiology applications. Essentially we can offer “tailor made” courses for your exact user needs and applications.

In our experience after the decision for purchasing a confocal microscope has been made the after sales support offered is critical. We believe that Leica offers you the highest level of professional customer support.

We believe that continual interaction and informal training sessions are very important. In essence we are keen that the confocal system is being used to its best effect and provides the information required by the User. As such, training, advice and applications support is very much on an “on-going” basis. We aim to create a “friendly and helpful” after sales support network which is beneficial to both sides.

Additional information requested by tender.

Software Updates

Future software upgrades are guaranteed free of charge for the lifetime of the instrument. **<rest of answer is deleted, since it contains business secrets>**. In addition LCS Lite Viewer software is available free of charge to all users of the confocal microscope and can be downloaded from our ftp site: <ftp://ftp.llt.de/pub/softlib/LCSLite/>. LCS workstation software and LCS Lite will operate within Windows NT, 200 or XP operating systems.

Movement of Equipment

We recommend that only trained Leica Confocal Service Engineers move/relocate the equipment.

Technical information on the system is available, however, due to the complexity of the equipments, full service support is recommended only from fully trained Leica Confocal Engineers. The technical specification of the system will be maintained until advances in technology provide benefits to the system and users. There is a wide range of upgrade paths for the equipment, which we are happy to provide on request.

Partnership/Collaboration

In addition, sometimes Leica would be keen to establish a working relationship with a University, including:

Exchange of information and ideas on software and equipment developments between Leica and the University might be appropriate. Collaboration to produce short technical/application notes on new applications, to be made available to other confocal users.

We would also be keen to run application workshops within University for the existing and new confocal user base.

Occasional access to the system by Leica personnel for product presentations to interested local groups, at mutually convenient times would be encouraged.

6. *How do you set the prices?*

Prices are set to market demands and expectations (cf. also answer to question 4 on page 4). In essence, our factory in Mannheim calculate the BMC and then transfer the product to the UK at a NTP. The UK selling organisation then applies a local margin. This applies generally world-wide. We have reasons to believe that Zeiss is encouraging price-dumping.

7. *Please describe how the production and supply of the advanced microscopy products as managed within the U.K. Please detail the factors involved, for instance the sourcing of parts.*

There is no production of our Confocal Microscopes in the UK, the systems are sourced from our Business Unit in Mannheim, Germany.

Spare Parts:

Parts that are often required are kept in the UK selling unit for quick response times. Larger items including lasers are maintained and managed by our Business Unit in Mannheim, Germany.

8. *What are the main barriers of entry into the advance 3D microscope business (defined here to include single and multi-photon microscopes) – e.g. patent restrictions, supply of parts, skills, R&D servicing?*

- a) Intellectual Property Rights (Patents) are Key Barriers, especially in cases where no viable customer-accepted alternatives are existing, as in the case of Femtosecond Multiphoton microscopy (compare answer to question 12).
 - b) Optical Know-how of the Producer's R&D are decisive for superior system performance especially in the high-end Advanced Microscopy Business.
 - c) Excellent Software R&D and Biomedical Application Know-how are necessary to transform customer wishes into usable products.
9. *What additional capital investment and revenue expenditure would be/was required to manufacture and market single and multi-photon microscopes in addition to the rest of your product range – if you are able to split this expenditure between single- and multi-photon microscopes, that would be helpful.*

All the Business Unit capital investment and revenue expenditure up to now went into the manufacturing and marketing of single/multi-photon microscopes, as this is **our only product** line technology.

10. *Please provide details of what in your opinion have been a significant technological developments in the advanced 3D microscopy – covering all suppliers – in the past seven years. Do you anticipate (with an indication of the degree of confidence) that there will be any further significant developments by you or other suppliers in the next five years?*
- a) AOTF Excitation control: Individual selection and attenuation of individual laser lines, pioneered by Leica, taken on by all competitors
 - b) Spectral Detection: flexible selection of emission detection bands & spectral analysis of specimens. Pioneered by Leica, alternative solution offered by Zeiss
 - c) AOBS (Acousto-Optical Beam Splitter) for flexible coupling of laser lines into the microscope objective and higher detection sensitivity. Leica Development.
 - d) "Hands-free" IR lasers to facilitate Multiphoton Microscopy. Pioneered by Spectra-Physics, followed by Coherent.
 - e) Solid State Lasers (e.g. 405 nm, 440 nm, 488 nm, 561 nm) replacing current Gas Laser technology for more stability and better lifetime.
 - f) Multi-Point Nipkow Disk Confocal/Multiphoton systems for fast live cell imaging (Pioneered by Yokogawa)
 - g) Highly sensitive Cameras (e.g. Andor) for improved live cell imaging of Widefield and Multipoint Confocal/Multiphoton systems.

We anticipate with 100% confidence further significant developments by Leica and other suppliers in this market within the next 5 years.

11. *Please provide details of all those companies that you regard as competitors in the supply of advanced 3D microscopes, if relevant, please split the list in to U.K. and global competitors.*

- *For each current competitor, please describe how competitive it is in terms of price, quality of service and any other relevant factors.*
- *Please list any additional potential competitors.*
- *How has this situation changed over the past seven years and what are the reasons for the change?*
- *How will the situation change over the next five years?*

Competitor	List Price	Discounts	Service	Quality
Carl Zeiss	>10%	Up to 50%	Very Good	High
Bio-Rad	< 15%	Up to 30%	Fair – good	Fair-good

Other potential competitors in the field of Laser scanning confocal/ multi-photon are Olympus, Nikon and Perkin-Elmer. Currently Olympus and Nikon have very small market shares. Perkin-Elmer does have a quite good market share in “fast” live cell imaging.

The main change over the last 7 years is that Carl Zeiss have increased their market share to ~ 40%, while Bio-Rad has had a falling market share to ~ 15% today. In addition, Perkin-Elmer has come in the niche “live cell” imaging market. The other significant change is the interest in live cell imaging where the multi-photon technique has proved a significant new development.

Over the next 5 years, we anticipate the increase in interest in live cell imaging techniques where multi-photon will play a significant part, also lower cost systems for individual users might become more prominent.

These statements are also basically valid in the global picture. A difference is here, that e.g. Olympus is a prominent player in the lower cost range in the USA and Japan and Nikon in the USA as well.

12. *Do you believe that the proposed merger could substantially lessen competition in the U.K.? If so could you please detail what you believe to be the likely effects.*

Yes: The merger will result in Carl Zeiss Jena GmbH (“Zeiss”) acquiring a market-dominating position and in a marginalisation on the market for multi-photon and single-photon microscopes in respect of Leica Microsystems. This will have a

detrimental effect on prices and also the rate of innovation will decrease. In both counts, the customer will potentially loose.

I. Facts of the case

The intention of Zeiss to acquire material parts of the assets of Bio-Rad Microscience Ltd. ("Bio-Rad") has been examined by the Office of Fair Trading ("OFT"). The OFT came to the conclusion that the matter must be referred to the Competition Commission.

The transaction relates to the confocal microscopy business of the US biotechnology group Bio-Rad Laboratories Inc., Hercules, California (USA), which is concentrated with Bio-Rad. The main objective of Zeiss in that transaction is to acquire the exclusive licences in respect of the U.S. Patent no. 5,034,613 and the European Patent no. 0 500 717 (and all of the family members originating there from) of Cornell-Research-Foundation Inc. (USA), which have been held by Bio-Rad.

The intended merger will terminate the patent dispute between Zeiss and Bio-Rad. The merger would result in the creation of a monopoly position of Zeiss in the area of multi-photon microscopy, with negative effects on the area of confocal laser-scanning microscopes as a whole.

Leica, being a supplier of confocal microscopes, has been heard in the previous proceedings before the OFT. Two questionnaires have been answered.

II. Merits

The intended merger has to be prohibited, as the merger will create, and increase, a market-dominating position of Zeiss. A clearance of the merger may be granted at the most on the condition that a sub-licence in respect of the exclusive rights of use of the patents of Cornell Research Foundation - the entire patent family of U.S. Patent 5,034,613 - be granted by Zeiss to Leica.

Single-photon and multi-photon microscopes provide the same application in the Life Science area; the appliances are the same and differ from each other only by the laser application. In addition, the (potential) customers are identical. What is merely

affected is a different price range but not a different area of application or use. The customers for single-photon microscopy (SPM) are potential customers for multi-photon microscopy (MPM): Whoever spends EUR 200,000 to 300,000 for an SPM appliance will consider the upgradability to the even more expensive MPM technology (up to more than EUR 500,000 for the system as a whole) elementary or a reason for exclusion, respectively. There exist, therefore, not two separate markets but rather one uniform market for both microscopy technologies.

The market for multi-photon microscopes (MPM) must be considered an integral part of the market for single-photon microscopes (SPM).

One cannot focus on the national market alone in the case at hand. Rather, the *global market is the dominating one*, as all suppliers and customers know each other. It must be explained in that respect that there exist Internet platforms and international conferences, such as the FOM (*Focus on Microscopy*), which specialises on the 3 D area and is held annually in a different country and has 300 to 500 attendants in each case), where all customers, including the inventors, exchange their experiences and problems; there thus exists a global "confocal community". Accordingly, the focus must be on the (European or) global sales.

One cannot infer from the service requirements that the national market applies exclusively. The service requirements alone cannot be a reason therefor; rather, it follows from the world-wide operations of the suppliers and the global contacts among suppliers and customers that the global sales must be used as a basis of the application of threshold values. It must further be explained in that context that Leica has established service groups for those globally distributed and very expensive appliances, who travel to the customer by plane to carry out maintenance/repair work on site. Merely national maintenance is not possible for the reason alone that there are countries - such as Denmark and Sweden - where only five MPM appliances are located; maintenance work is rendered by the service staff travelling by plane also to those countries.

There exist different technologies *<rest of answer is deleted, since it contains business secrets>*. The merger and the take-over of the exclusive patent right will undoubtedly result in the creation of a market-dominating position.

There exist different technological approaches in respect of the multi-photon microscopy (MPM) with a femtosecond laser by Bio-Rad and the MPM using a picosecond laser by Leica.

While the picosecond technology by Leica and the femtosecond technology are equal in terms of the instrument engineering, the prevailing number of market participants does not consider these two technologies for multi-photon microscopes equal on the market due to different applications.

A material difference in the applications relates to the different penetration depth. *<rest of answer is deleted, since it contains **business secrets**>*. Owing to that technological lead of Bio-Rad, which have been active on the British market only rudimentarily in the last few years, the merger with Zeiss will result in the creation of a dominating position on the British market.

As Zeiss, together with Leica, has already formed a close duopoly before, there is a very high probability that the merger of Bio-Rad/Zeiss Jena will result in an increase of a market-dominating position, which more and more attracts customers of both single-photon and multi-photon microscopes. At the same time, there is the danger of a marginalisation of Leica for the sale of both types of microscopes, if the merger is not prohibited, or approved without the condition sought for.

Owing to the close interrelation of the market, the market-dominating position on the market for SPM also affects the overall market for confocal microscopes.

The interrelation of the two markets for multi-photon and single-photon microscopes results from the following circumstances: Almost all customers request upgradability for their single-photon microscopes in order that they can also use the more expensive multi-photon technology in future. As regard the upgrades, the customers clearly tend to femtosecond appliances to which Bio-Rad (until now exclusively) and now - following the merger - Zeiss/Bio-Rad have the exclusive rights of use of the patents of the Cornell Research Foundation.

Some current examples show that customers of high-quality suppliers of optical appliances (such as Zeiss Jena or Leica) only wish to be supplied with single-photon

microscopes if there exists upgradability to multi-photon microscopes using femtosecond technology.

Bio-Rad has not been in a position on the market to meet that high demand until now; its market share in Great Britain was 10 % to 15 %. That situation will change dramatically by the consummation of the merger. By the merger, Zeiss will acquire or strengthen a market-dominating position. As a consequence, Leica will not have any chances of fair competition both on the market for multi-photon and single-photon microscopes.

By the acquisition of the exclusive licence for said patent, competition in the market segments served by the multi-photon technology will virtually cease to exist. The exclusive rights of use of the patent result in Zeiss acquiring a monopoly position on the British market. The prices of multi-photon and single-photon microscopes could be controlled at will. The prohibition of the intended merger, therefore, is indispensable.

The prohibition of the intended merger is mandatory. In a more lenient manner, the intended merger could be approved at the most on the condition that Zeiss and Bio-Rad be obliged to grant to Leica and to other reasonable applicants a sub-licence in respect of the exclusive rights of use of the patents of Cornell Research Foundation - the entire patent family of U.S. Patent 5,034,613. Without such condition, the approval of the merger will be unlawful in any event.

Final comment

Our client opposes to the acquisition by Carl Zeiss Jena GmbH of the microscopy business of Bio-Rad Microscience. It is obvious that this acquisition will lessen competition substantially and finally create a monopoly for all confocal microscopy.

Our client reserves all rights to pose this merger and wants to be treated as formerly affected by this procedure; thus, he should be treated as affected party and be notified of any decisions.

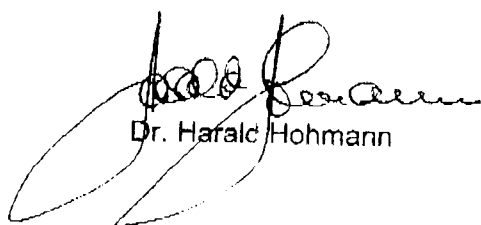
If you have any queries please do not hesitate to contact us:

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Yours sincerely,

Hohmann & Partner, Attorneys



Dr. Harald Hohmann



Ricardo Hernández Püschel, LL.M.

encl.

Power of attorney

Neue Anschrift ab 01.02.04

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