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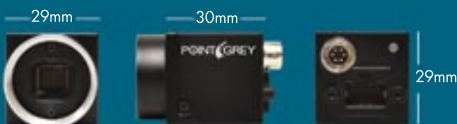
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One Step Ahead

The INSPECT team ended the editorial year 2012 with the Buyers Guide, an overview of the European machine vision market. We have compiled data and information about the services provided by considerably more than 400 companies from over 30 countries in this official directory of companies and manufacturers of the European Machine Vision Association (EMVA). 10% more companies have contributed an entry to this issue of the Buyers Guide than in the previous year. For us, this increase confirms the continuing upward trend of the industry.

This year the EMVA Buyers Guide will be published immediately after the Vision show – the event highlight in 2012. Here too, the dynamics and the positive outlook for the future were apparent. In the future, vision technologies are certain to play an increasing role in improving efficiency and quality in industrial production. Further industries in Europe will open up to the use of image processing if they wish to stay ahead in the global competition for the best solutions and products. There are therefore good opportunities for continued growth for the exhibitors at the Vision and the companies which are represented in this issue.

However, a key event such as the Vision only lasts a few days. The Buyers Guide can accompany you as a useful work of reference far into 2013. For this, we have categorised the increasing volume of services into a clear and manageable structure.

The compilation, intelligent structuring and timely provision of information is our core competence and our role in the machine vision community. We want to support you in your search and to ensure that you are already working on a solution with the right products and service providers, while those who do not read INSPECT are still searching.

I hope that you always have this issue of the EMVA Buyers Guide at hand and are always one decisive step ahead of the competition in 2013.

Bernhard Schroth
Editor-in-Chief INSPECT



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SEEING IS BELIEVING

Machine Vision and Optical Metrology in Europe

The INSPECT Buyers Guide 2013

Throughout the year, we aim to provide you with information about new developments, technological trends, groundbreaking applications, new products and leading companies. Throughout the year, we are faced with the recurring challenge: What to select, what to highlight, what to point out. There is never enough room to cover it all. So once a year we seize the opportunity to present to you a comprehensive overview of the machine vision and optical metrology industries.



The Online Buyers Guide provides sophisticated search functions for all listed companies.



The full text search for "camera" yields 147 results: every company having used the word "camera" in their description is listed.



Companies providing a fullfledged company profile will be additionally found in multiple categories with the keyword search.

The INSPECT Buyers Guide is published in its fifth year now, for the fourth time it also serves as the official Buyers Guide of the EMVA, the European Machine Vision Association. The guide contains information about more than 400 companies from over 30 countries. The INSPECT Buyers Guide has a clear focus on companies doing business in Europe or exporting their goods to Europe. Naturally this comprehends companies and organizations from all over the world.

Online ...

The INSPECT Buyers Guide is a true cross-media product. At www.inspect-online.com/buyers-guide the online database provides sophisticated search functions for all listed companies. Every entry can be searched for with full-text search, and every listed company will be found here based on the individual company description. Additionally, every listed company will be found by name, company category (e.g. producer, integrator, research facility, association, etc.) and country of headquarters.

Companies wanting to provide more information and aiming at even better search results are listed with a company profile, including detailed company data and a listing of products offered, industries served and applications catered to. These, and only these, companies will be found in the respective search categories.

The online Buyers Guide is open for companies within the scope of the INSPECT all year round. In this way it is always up-to-date.

... and Print

The availability of data online is a clear benefit when presented with clever search functions. However, sometimes you do not want to bother going online, or you

don't want to search specifically but rather obtain a quick overview. In these instances a printed version has its unchallenged advantages. Not to mention the ease-of-use when taking notes right next to the provided data. Thus, once a year the INSPECT Buyers Guide printed edition is provided to you. With this guide we aim to give

you a full overview that is still easy-to-use, a complete set of information that is still not too sub-divided into too many categories.

The INSPECT Buyers Guide 2013 is divided into three main chapters: Topics of longterm impact, company profiles for the main global regions, and company listings for the main product categories.

ries. In an industry as innovative and dynamic as ours it will most likely never be possible to provide an overview that is final and complete, but we do our best to come as close as possible.

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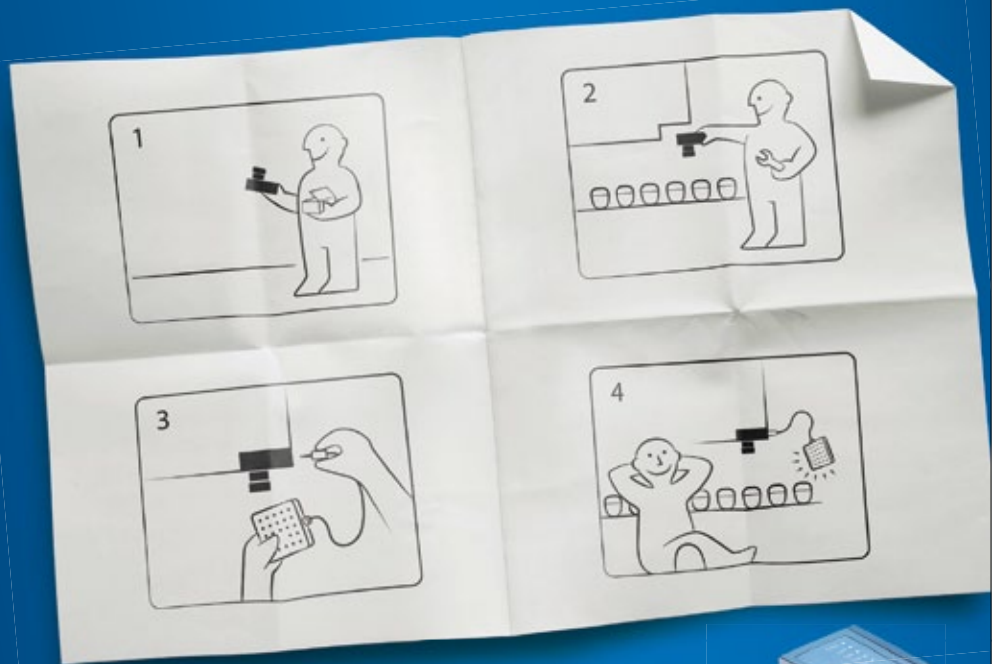


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Taking a Close Look: The European Machine Vision Industry

Country-Specific Market Information from the EMVA Reports

The European Vision Technology Market Statistics are a unique source of detailed information on the machine vision industry in Europe. With the core chapter of the report being a detailed analysis of machine vision sales out of Europe as well as an overview about European market and industry trends, the study has been continuously complemented by qualitative information on specific European countries.

Based on the comprehensive quantitative data gathered through a questionnaire sent out to hundreds of machine vision companies each year, five years ago the European Machine Vision Association (EMVA) has begun to expand its annual industry study "European Vision Technology Market Statistics." Analyzing the total European machine vision industry on a regular basis, it had become clear that a closer look into the specific countries in Europe will provide valuable information in addition to the existing analysis of industry as a whole. With a separate analysis of the German market already in place, a strategy has been set up to successively cover the major machine vision markets in Europe and dedicate to each of them their own chapter within the study, covering both quantitative and qualitative data.

Industry Volume

A prime motivation to cover more and more European markets by specific country reports is to eventually be able to provide a valid extrapolation of the total volume of machine vision industry in Europe. Already, such extrapolations of the industry volumes are being done for Germany, Italy, the United Kingdom, France, and Benelux. The machine vision industry in these countries or regions has been investigated intensively in order to provide a data base of close to all enterprises active in the field of machine vision in the respective coun-



try by name, activity and size. Only then can the data gathered directly from the companies through the questionnaire be extrapolated into valid industry size estimation. The methodology used to extrapolate the national market volumes complements the data returned by the companies with expert opinions upon the size of machine vision companies that did not return the questionnaire and to identify hitherto unknown companies. This, together with an extensive desktop research using commercial registers, in-

ternet databases, information from corporate websites, national associations and cluster organizations, provides the basis for a very comprehensive coverage of the machine vision players in the respective country. These data is supplemented and validated by telephone interviews and expert opinions gathered during workshops and trade shows. This also includes a series of personal, qualitative in-depth interviews of selected key players along the machine vision value chain in the respective countries.



Market Particularities

After four years of experience with the country-specific reports, it has become evident that the machine vision industry is far from being homogenous across Europe. Instead, each country report we conducted revealed specific peculiarities which distinguish the respective market from other European markets. This includes all relevant parameters to qualify the machine industry in a given market, such as size, number of companies, manufacturing penetration of these companies, applications they provide and the

The „European Vision Technology Market Statistics“ is an annual study issued by the European Machine Vision Association (EMVA). The core of the study is based on a questionnaire that is sent out to the companies of the European machine vision industry, which results are then supplemented by numerous expert interviews. The 2012 edition contains data from 247 companies. There is no other market study available for machine vision that can compare with this wealth of relevant first-hand data. More information on the EMVA and how to obtain the study on

www.emva.org and via e-mail at info@emva.org



industries they serve. For instance, the UK machine vision industry has only very few manufacturers of vision components and relies to a great length on imports. As to customer industries, the automotive industry is a key driver of machine vision technology and is a major reason for the German machine vision market being the number one in Europe. Yet, the customer structure of most other machine vision markets in Europe is much more diverse: In France, the aeronautic industry plays a much larger role for machine vision enterprises than automotive customers; machine vision for agriculture on the other hand is primarily found in the Netherlands.

New Players

In a still fairly young and heterogeneous industry such as the machine vision industry, there is continuous movement and a rather high volatility. Thus, another positive result of the close investigation of the to-date five markets is that a good number of new companies could be identified in each of these regions. These companies were either new on the market or not visible until then since they are specialized on certain niches or only act within a local or regional radius, e.g. small integrators. In an ever increasing number of applications in new fields and sectors, there will always be new market entries which need to be moni-

tored in order to observe the development of the whole industry.

European Characteristics

Other characteristics of a country-specific machine vision market are the level of collaboration between research and the industry, and also more general economic factors such as the significance of industrial production, services and farming, respectively, in the economy; its export orientation, and whether there are geographic industry clusters which offer opportunities to the machine vision sector to specialize. Each of these characteristics influences the way a domestic machine vision market is set up and will further develop. Accumulating and analyzing this data step-by-step helps to understand the structure of the European machine vision industry as a whole.

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Machine Vision in North America

What to Expect for 2013?

The market for machine vision (MV) components and systems in North America has been highly turbulent in recent years. During the Great Recession, sales growth nearly stalled at 1.2% in 2008 and then dropped precipitously in 2009 by an unprecedented -29.2%.

Earlier, during the 2002 US recession, the business cycle exacted a high toll, with MV sales plummeting by -14.8%. So when the Great Recession struck in 2008-09, the influence of the business cycle was hardly unknown. However, nothing could have prepared the MV industry in North America for the extent of damage that occurred. Nearly one-third (29.2%) of the market shrunk between 2008 and 2009!

Recovery from Recession

But like a rubber ball, what goes down can bounce back up, and that is exactly what happened with machine vision sales in 2010. Following the Great Recession, a recovery began in 2010, bringing a dramatic uptick in MV sales of 60.2% in response to strong, pent-up demand. As a result, sales in that year were well above trend.

In the year that followed, 2011, the fever pitch of sales activity continued with volumes well above the historical trend line.

As of this writing, we are unable to draw on a full four

quarters of data for 2012. (Fourth quarter results of large, publicly-traded companies won't be released until February, 2013.) However, with available, actual data for 2012, sentiment scores taken from the last AIA Quarterly Tracking Report, economic forecasts, and a trend analysis, we were able to forecast 2012 sales. Based on our forecast, and the strength of 2011 sales, we expect a percent annual change in sales of -2.4% in 2012.

It is important to note that the lower rate of sales growth of 4.7% in 2011 reflects primarily the strong sales volumes of 2010. By contrast, the forecast rate of sales growth of -2.4% for 2012 derives from satisfaction of much of the pent-up demand occurring in the preceding years of 2010 and 2011. Additionally, the rate of sales growth for 2012 reflects a reduction in demand during that year caused by a slowing US manufacturing sector. This is indicated by both the



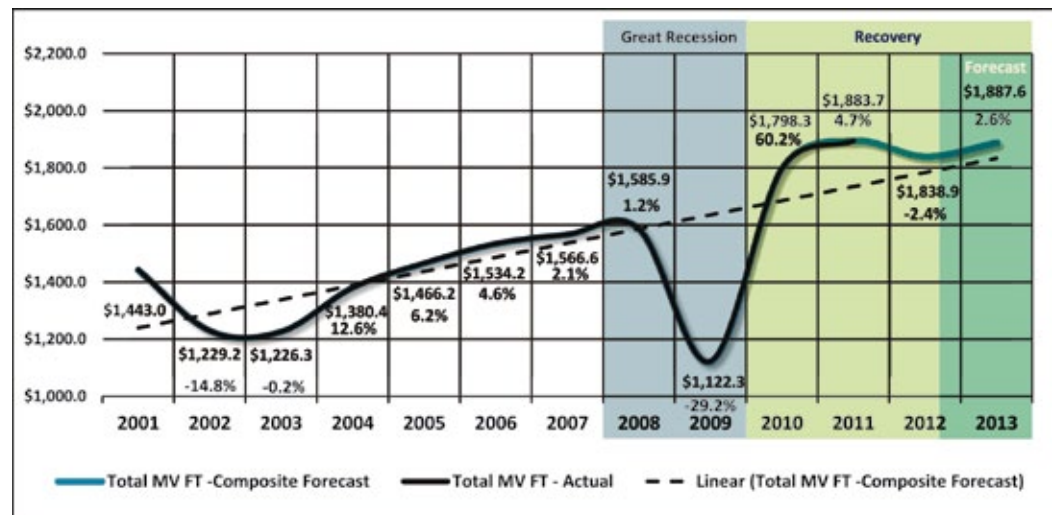
average, annual US Purchasing Managers Index (PMI), which measures expansion/contraction of the manufacturing sector, and US industrial production. (Both indicators are shown below for years 2010-13.)

Positive Trend

We must also note that while the business cycle largely explains fluctuations in MV sales, there is additionally a strong, positive trend component to MV sales that we

US Manufacturing Indices

	2010	2011	2012 (forecast)	2013 (forecast)
PMI	57.3%	55.3%	51.3%	50.2%
Industrial Production	6.3%	4.8%	4.5%	2.3%



Total Machine Vision Financial Transactions (MV Component + MV System Sales) in US\$ Millions (USD)

believe results from machine vision's value proposition of increased productivity, greater efficiency and enhanced product quality. Both a visual examination of MV sales data plotted over time and a regression analysis leave little doubt that despite the vagaries of the business cycle, MV sales in North America have generally followed an upward trajectory. What this means is that sales volumes have fluctuated around a trend line that has exhibited a decidedly positive slope. This trend line is readily discernible from historical sales data, as shown by the following plot of total machine vision financial transactions (which are the sum of total MV component and system sales).

For 2013 we expect annual MV sales to approach the trend line. As a result, MV sales growth should re-enter positive territory with a rate of growth of +2.6% in 2013.

Our 2013 forecast is not only based on a linear extrapolation of the MV sales trend line but also recent sales performance and economic forecasts for the US manufacturing sector (as previously indicated). We also validated our 2013 forecast with the results of a sentiment survey that identified industry expectations as positive for 2013, with an overwhelming portion (59%) of survey respondents predicting sales growth.

If the industry is correct in its expectations and our 2013 MV sales forecast is accurate, machine vision companies selling into the North American market should do reasonably well. But of course there are no guarantees. Unforeseen events can and do occur, throwing off the most meticulously derived forecasts. For example, partisan intransigence in the US Congress could result in a budgetary deadlock, with the US economy hurdling over the so-called "fiscal cliff." Addi-

tionally, a war with Iran could result in a spike in the price of oil, which would devastate the US economy. A negative, spill-over effect from Eurozone troubles could similarly wreak economic havoc. However, as of now at least, we assume these events will not occur and the overall US economy and manufacturing sector will continue to exhibit weak growth. We therefore

expect 2013 to be a year of sales growth for machine vision companies.

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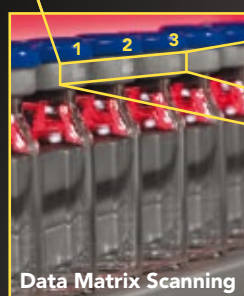
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Make or Buy?

Standardization for Image Processing



The panelists (from left to right): George Chamberlain, Co-founder and President, Pleora Technologies Inc.; Dr. Friedrich Dierks, Director of Platform Development, Basler AG; Bernhard Schroth, Editor-in-Chief, INSPECT; Dr. rer. nat. Klaus-Henning Noffz, Co-founder and Member of the Executive Board, Silicon Software GmbH; Jochem Herrmann, Co-founder and Chief Scientist, Adimec Advanced Image Systems B.V.; Thomas Nepstad, Field Product Marketing Manager Vision Software, Cognex Germany

Photo: VDMA

Although the Machine Vision market is relatively small, it has specific needs that cannot always be fulfilled by existing standards. For this reason, several standards have been especially developed for the Machine Vision market, like Camera Link, CoaXPress, EMVA1288, GenICam and GigE Vision. Right now, even more interface standards are on their way onto the market, like Camera Link HS and USB3 Vision.

What are these standards about? What is the benefit for users of machine vision? And what makes this topic so important for the vendor that companies are putting so much effort into working on standardization?

Does developing standards for such a small industry make sense? Or would it be more prudent to adopt existing standards from the consumer industry or from larger industry groups with more market power?

These were just some of the questions discussed during the INSPECT panel discussion "Make or buy? – Standardization for image processing" at this year's Vision show in Stuttgart.



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INSPECT: Who needs machine vision standards? Do standards benefit the user of machine vision technology? And why can't standards be used that already exist elsewhere?

G. Chamberlain: Let us look at the relationship between users and vendors. If a user is working with a proprietary offering from a company, the vendor has a lot of power and the user runs the risk of the vendor not being able to supply the product. And if you don't have that security of supply, then your revenue is at stake as well. So I think it's a very poor business process for a company to be relying on products that aren't standard, because it means they can't have second sources.

So who else can benefit? We have the machine vision market itself, the core for manufacturing quality inspection, and one of the essences of this market is that we're doing real-time analysis on high-speed video. Generally, we need low consistent latency, and these properties are actually fairly specific to our market. You can't find these exact requirements in other markets. So it's hard to leverage other standards from other markets.

K.-H. Noffz: We are now a broad market and proprietary interfaces are only an adequate solution in very few areas. The question is whether the consumer standards will fulfil the needs of the market. We have a lot of experience in adopting these standards, like Gigabit Ethernet, USB3 and FireWire, but I don't really believe this is the ultimate answer, because we have special needs in the market. It's like asking: "Why don't you buy your camera from the electronics warehouse next door? It has a sensor, USB3 interface and is probably much cheaper than anything you can find here." You won't do that because machine vision needs additional things, like different resolution and bandwidth, and – much more important – you need high product reliability. You need support and you need long-term availability. So even if consumer standards are popular and also successful, I see a problem in long-term guarantees.

Using standardization means that products become interchangeable, which clearly makes it attractive from the customer's point of view. But what is in it for the vendors? What are the benefits of standards from their point of view?

F. Dierks: There's something that I would call the vendor's dilemma. Because, first

of all, a vendor who is thinking about investing time in a standard will think he is giving away know-how. And the other problem is, if there is a standard, products become interchangeable and that means competition becomes higher. So the first impulse for a vendor would be: "Don't do standards!" You might want to lock your customer in and your special API might be much better. But the experience from the past is that you can only develop the market if you have a standard, because customers can't stand being locked in and they want to have a commitment from companies.

And there are other benefits for vendors. When you do the first standardization, it's just overheads and work. But when you create the second standard, you find that you can start reusing things. We've now just finalized the USB3 Vision standard where we could reuse huge amounts of work that had already been done on previous standards. We were able to make a full-blown standard in only 14 months from the kickoff meeting to the first release candidate, with only three meetings. That means we have now saved a lot of costs.

T. Nepstad: One way to grow markets is to have an efficient solution. Now, you may ask how a standard can create an efficient solution and how you can measure that. One easy way to figure that out is by looking at the database of support calls that you receive. If we look back to the introduction of GigE Vision, we saw that there were many technical support calls on Gigabit or GigE Vision. It turned out that a standard is very useful, but it's even more useful if it's a living standard. So what we learned is, by talking with the vendors and making sure that every camera can work with every, let's say, driver, you make your customers efficient. They're not wasting their time trying to figure out why this camera works and that camera doesn't work. But they simply solve their application and can get to the next application much more quickly, and this in return helps to grow the market.

Some standards have already been developed by the machine vision industry. What are these standards and why are the majority of them interface standards? And by the way: Does it not defy the concept of standards when so many of them are created for the same purpose, i.e. the camera interface?

G. Chamberlain: Standards for our industry originate through three different

associations. AIA has Camera Link, Camera Link HS, GigE Vision and USB3 Vision just emerging. All four of those are camera interface standards. EMVA has 1288 for measuring camera characteristics and GenICam, which is actually the software interface for the camera interface standards. And then there's J11A, which has IIDC – which relates to FireWire – CoaXPress, and then some lens and lighting standards. As you can see, almost all of them are actually interface standards, and at first glance it would seem that this is a problem because our industry is so small, and if you have too many standards, then they might as well be proprietary solutions. But the fact is, they've come in at different times. Camera Link was introduced well over 10 years ago and it's probably going to have 10 years or more of lifespan, and it addressed a particular need at the time. The new standards that have come into place have addressed new needs, and what we're seeing is that our standardization work is now building on other work we have already done. And why is there a focus on interface standards in particular and not on other types of standards? I think that addressing interface standards provides the biggest return on investment for vendors and customers.

How do you know what the industry needs and when a new standard might actually provide enough benefits to become accepted?

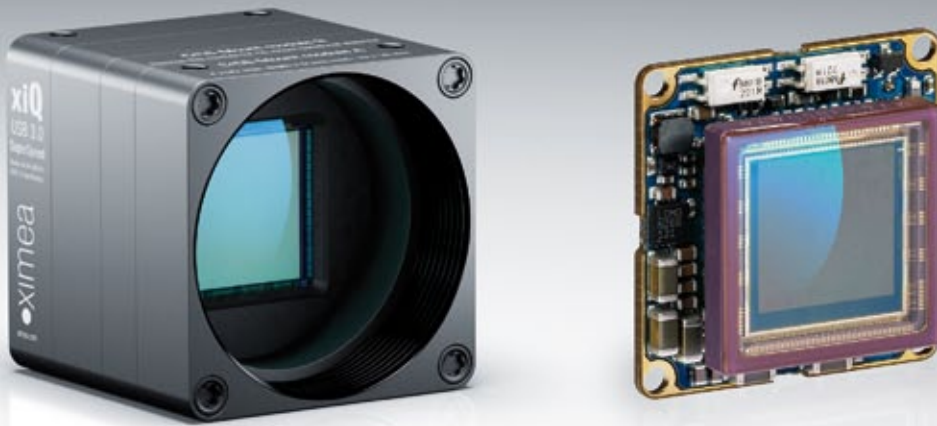
J. Herrmann: I think it's not primarily about what the vendors would like. You should start at your market, your customers, and find out what they require. For example, we see a trend where the systems are getting faster and the standard you have is not fast enough for that. Or if you need longer cables and that's not covered by one of the other standards. The market demand is one pull, and the other is new technology popping up. So you see the new USB3, which is promising, or Light Peak or Thunderbolt, or whatever – there are so many new standards coming out of the consumer market that are driving all this work. And then you say: "Okay, this is a requirement we'd like to meet, this is the technology that makes it possible, now look at the standards we already have." And what you should ask then is: "What is the best thing to do? Should we make a new standard or should we work on an older standard and make it better?" That's basically how it normally works. You talk to other people, other camera vendors and other frame grabber vendors, and you

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talk with customers and you try to find out: "Okay, if I do this, would it help you?" And you also know that you cannot do this all by yourself. As we have been saying before, as soon as you do something on your own, the customer will probably not accept it, so you have to find supporters. And then, typically, you start up with a small group working on it.

What can be done to make sure a standard is used on a global scale?

F. Dierks: There is the G3, an umbrella organization of the AIA, EMVA and JIIA, and they agreed to kind of market their standards on a global scale. But if you look a bit deeper, things are more complicated. What does it mean to tell people on a global scale to use a certain standard? It actually means that vendors around the globe have to be a part of the standardization, have to adopt the standards in their products and tell their customers to use them. This is a bit of a problem, because the peer group that has been doing the standardization for around the last 10 years is mainly composed of people from Europe, the US and Japan. We have two large meetings every year – typically one in Europe and one in the US. But we have had only two meetings in Japan up to now, so we are kind of Europe and US centric. What we really want to accomplish is to bring more Asian companies on board. The biggest barrier we have found is the language, because for historical reasons we started doing everything in English. And of course somebody who is culturally very far away from English might have a problem taking part in all these discussions. We have to overcome this. I think a key to getting things scaled globally is to get more Asian companies into our peer group.

It seems that the machine vision associations do a lot of the work when it comes to organization and disseminating information about the technical aspects of standardization. How can interested parties participate in standardization activities?

K.-H. Noffz: Usually these associations are open. Sometimes you need a small kernel of people to do the initial work, but these groups are open to all members and to all companies. In general, I think it's important that all interested companies have the chance to partic-

ipate in this work. These groups are driven by the vendors, so they are very close to the needs of the market. The machine vision associations then do the hosting. None of them creates content or defines standards on its own. They provide an organizational interface. There is the G3 agreement between the big trade associations in the US, Europe and Asia, which helps avoid overlapping standards and creates collaboration and consensus among those associations. And there is a "Future Standards Forum," which has a long-term outlook. So I would recommend companies to stay in close contact with the associations.

A lot of people claim that standardization work is for bureaucrats and inevitably leads to mediocrity because it results in a lot of compromises. Is it not fair to say that standards kill innovation and lead to the death of the flexibility and speed needed in our industry?

T. Nepstad: Looking at a standard is more or less like creating a piece of clothing for a specific technology. It could be a well-tailored suit or it could be a tight jacket where you cannot move at all.

If you ask very sophisticated cutting-edge companies that do new things every day, they will see a standard as a tight jacket, because it limits them from doing a lot of things. But the reality is that 70 % of customers – for instance, if we take GigE Vision – just want to take an image, set the exposure and do some very simple handling. I think creating standards that will fulfil the needs of that 70 % of the market is very useful.

With any standard, we should find out whether there is a benefit for the customer. And if there is a clear benefit, then I would say yes, it's great to use standards to cut or limit the possibilities of a specific functionality.

There are some industries using similar technologies to machine vision – just look at camera-based security or surveillance. Is machine vision working together with these industries on standardization issues?

J. Herrmann: Being able to extend your standard to other markets would in fact be a great idea. It would allow you to sell in other markets, as you would already have a product, or more or less a product. For example, a lot of people are inter-

ested in GigE Vision. We know there are some military associations, also in the US and in England, that are interested in using that. We have this with CoaXPress in the US, with the Motion Imagery Standards Board. We are also looking at ways of getting some of our standards into the security and surveillance market, because that would be a great enabler for other sales for us in that market.

The new initiative, the "Future Standards Forum," is actively looking for new possibilities. If we decide upon a certain standard, we will look to see whether it could also be a standard for other markets. So instead of finding out, "By the way, the standard would fit there as well," we would like to plan ahead, without too many overheads. Because, of course, we need the machine vision industry standard – that's the primary goal. But we'll definitely be taking a look at other opportunities and I think that's a benefit for us all.

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A European Approach

EMVA Puts Machine Vision on Future R & D Road Maps

The current situation which some of the European countries are in may lead to less funding for research projects by the national governments. Funding by the European Commission will become more important for innovative technology projects. At the Vision show in Stuttgart Bernhard Schroth talked to Antonio Ventura-Traveset, President of the European Machine Vision Association (EMVA), about how the EMVA can help members to successfully participate in future European research projects.



Antonio Ventura-Traveset

INSPECT: Mr. Ventura-Traveset the EMVA is concentrating on a new topic for the future that is supporting companies and especially SMEs, which are interested to participate in international research projects. What kinds of projects are available and attractive for machine vision companies?

A. Ventura-Traveset: Today the European Commission supports different kinds of projects. Some are more related to basic research – for example regarding new basic technologies for sensors and new optical technologies. The European Commission is now trying to move this more to the market. For this reason three years ago the European Commission created a new programme called “Factories of the Future” (FoF). The type of projects they are funding at the moment with FoF are more regarding the application of technology into new industrial areas and also the dissemination of these technologies in some sectors. They are especially interested in traditional manufacturing sectors, like automotive metal working, so this gives our own industrial sector the opportunity to participate in the kind of projects that we are used to work on. Since in any new project vision companies do a little bit of this kind of research – that means looking for the best architecture of the system, the best set up – this is something that fits very well into the “Factories of the Future” project.

What is the EMVA doing in this programme?

A. Ventura-Traveset: The European Commission and the Manufature tech-

nology platform promoted an association called the “European Factories of the Future Research Association” (EFFRA). The main European engineering companies as well automotive industry and some automation and robot manufacturers are members of this association. Research institutes are also represented. I am representing the machine vision industry in EFFRA.

So with the help of this association the European Commission is evaluating what the hot topics and priorities are, and is also defining what is called a road map in manufacturing technologies. The first thing we are doing at the EMVA is trying to contribute to the content of the European Commission road map in order to explicitly have machine vision as a topic on it.

Is it comparable to the Framework Programme of the European Commission?

A. Ventura-Traveset: In fact „Factories of the Future“ is based on the existing tool of the Seventh Framework Programme (FP7). Today we have two different programmes in FP7. The „Information and Communication Technologies Programme“, called ICT. The other is NMP, which covers manufacturing technologies. You can find FoF topics in both ICT and NMP.

Currently we have a call for proposals, then there will be an evaluation process, and if you are successful with your proposal, you will have a negotiation. That means it can take a year between the presentation of the proposal and the

day when the contract is signed with the European Commission. But that is not acceptable and it is something we are discussing with the European Commission. The EMVA is especially interested in simplifying the process. However, the first thing we are doing is trying to influence the programmes. With this in mind the EMVA established a research and development working group, and one of the goals of this group is to define a road map for machine vision.

This working group started last year, and we are organising new meetings to attract more people. We also have some representatives from universities, institutes and companies in this group. Which is very important because we need to guide the European Commission by saying: “This is what we think the priorities are for our sector and what we think the priorities are for research and development projects.”

What we also want is to help the EMVA standardisation groups with public funding to advance the development of standards. In fact, standardisation is one of the hot topics of today. For example, in the last call for the NMP and the ICT programmes, there are at least six topics where standardisation is a main aspect.

What is EMVA doing for the members, the companies.

A. Ventura-Traveset: First of all we provide information about the different programmes we have in Europe. We not only have the Framework Programme. We have other things like agreements be-

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tween regions in Europe that finance regional projects. An example of this is an organisation called ITEA for software intensive systems. ITEA cooperates with regional governments and evaluates the projects. Once you have the ITEA stamp, saying that this is an interesting project, the country finances the part of the project for partners in that country.

Does the funding always come from the government?

A. Ventura-Traveset: In that case yes. In some cases it can be a mixture. For example, we have some initiatives in the aerospace industry where an aerospace association is co-financing, but normally funding comes from the regional governments or countries or from the European Commission. Another programme is Eurostars. It works the same way. But the funding of these projects comes from the different countries, not from the European Commission. That means the information you need to be aware of, with regards to the opportunities you have, is really complex. And this is really difficult for our members.

Every month, we send our members a report with information about these different opportunities. So our members do not need to go to the source obviously. Once you identify a programme that is interesting, then you go into detail.

Do the EMVA members have to act on their own, or can they go back to the EMVA and ask for consultancy?

A. Ventura-Traveset: We at the EMVA do not provide direct consultancy. If the company asks we can provide the names of consultancy companies that can help. We are something like a bridge between our companies and other industries and sectors. For example, if a company is looking for a partner in a specific application field, then we can build this bridge. We have contacts to other associations and then we can prepare a so called "expression of interest." And we can say: "We have this company that is looking for partners," and send this expression of interest to different associations. This works the opposite way as well. For example we can have a robotics company that is looking for a partner in a specific area of machine vision, and they can contact us. Then we can send this information to our members and say: "Okay, we have this company looking for

a partner who can do that, that and that, and these are the skills they are looking for." This is interesting because looking for research partners can be very complex for small companies.

What is the current status from your point of view? What position are you in regarding this idea of supporting research work and projects?

A. Ventura-Traveset: Today we are facing a challenge. First, we need to understand that most of the funding for research and development in Europe in the future will come from the European Commission. National governments are having some problems financing this. So as a community of companies, we need to understand that our natural partner in research and development will be the European Commission. And we are now reaching some important deadlines, because the European Commission is defining the new Framework Programme. The current one – FP7 – is ending this year.

2013 will be a preparation year, and they are defining what is called "Horizon 2020." At the moment the European Commission is asking the industry to tell them what is important.

What is the role of EMVA at this point?

A. Ventura-Traveset: It is very important that the machine vision sector will be present during this preparatory phase. We have to make sure that the European Commission understands that machine vision is a key enabling technology.

One of the goals of the European Commission is to help transform the manufacturing industry in Europe from a traditional industry to a much more knowledge-based one. That means we need manufacturing plants that are more flexible and more adaptable to the changing situation of the market, and that provide the necessary product quality, while at the same time being able to customise the products – that means mass customisation. And ultimately there are some technologies that are key technologies for that, and one of those is machine vision. Only very few technologies are able to provide this transformation from physical manufacturing to knowledge-based manufacturing the way that machine vision can. This is something we are explaining to the European Commission.

We are not only trying to influence the contents of the new Framework

Programme, but also the way this programme will be implemented. Because many member companies of the EMVA say: "Okay, these projects are very interesting, but we are a small company so just the paperwork involved in such a project is too much for us."

Do the companies fear that it costs them more money than they get back from the research project if it's funded?

A. Ventura-Traveset: Yes. But we have to understand that in this year, the European Commission will spend twice the money on manufacturing-related projects than it had the previous year, and the previous year it spent twice as much as the year before.

So there's a trend and we are talking about a lot of money. We are a knowledge-driven industry and it is very important for us to make it easier for our member companies to both generate knowledge – and this is research and development – and also to disseminate this knowledge – this is education. And with this, training, education and dissemination we want to help EMVA companies.

Just one final question: How do the EMVA members honour this initiative to go into these research projects?

A. Ventura-Traveset: This is difficult to answer. But in my opinion – and this is also the view today of the EMVA – we need a leading group in this community. We know that not all companies are interested, but if there are 20 to 25 % of companies that say "yes," we need to help the companies that are really following the path of innovation.

Mr. Ventura-Traveset, thank you very much for this interview.

Read the full version of the interview on INSPECT online.

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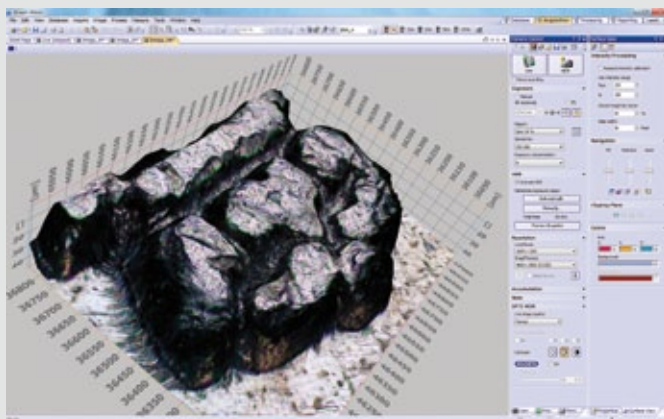
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The DSX100 is optimised for the inspection and analysis of industrial products and materials. Its sturdy, free-angle design negates any need to move the sample, recalibrate or adjust focus when changing the viewing angle.

Stream 1.8 – Documentation and Analysis Technology

The enhanced Olympus Stream 1.8 software provides new and improved features to help users fully optimise their workflows. Users will benefit from the advanced automation of a multiple stage location engine, extended data management and new measurement options such as Particle Distribution, Porosity, Throwing Power and Phase Analysis, providing an additional depth to the standard quantitative analysis functions.



Your Vision, Our Future

Olympus Europa Holding GmbH
Wendenstr. 14–18
20097 Hamburg
Germany
Tel.: +49 40 23773 0
Fax: +49 40 23773 4647
microscopy@olympus-europa.com
www.olympus-ims.com/en/microscope/

See our ad on page

Outside Back Cover



About Basler

Basler is a global provider of premium digital cameras for industrial and video surveillance applications, medical devices, and traffic systems. Our product portfolio offers customers the vision industry's widest selection of industrial and network cameras. Today it includes some 300 models – and it's still growing. Our expertise includes multiple sensor technologies and covers all important standards and promising emerging interfaces: Gigabit Ethernet, FireWire, Camera Link and USB 3.0. Product designs offer easy integration, compact size, excellent image quality,

and a very strong price/performance ratio.

Founded in 1988, Basler has the experience, insight and manpower to lead the industry. The company employs around 300 people at its headquarters in Ahrensburg, Germany, as well as at international subsidiaries and offices in the U.S., Singapore, Taiwan, and Korea.



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Basler Asia Pte Ltd.
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Management

Dr. Dietmar Ley, CEO
Alexander Temme, Director of Sales
Herfried Beckdorf, Head of European Sales

Foundation

1988

Staff

251–500

Products

Cameras

Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Webbed

Material, Material Testing, Metrology 2D, Metrology 3D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Symbol Recognition, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/SolarTechnology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Platforms supported

Windows, Linux

Associations

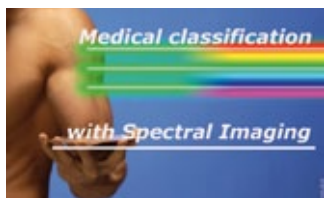
AIA, VDMA

Regions served

Africa, Asia, Australia, Central Europe, China, EMEA, Europe, Japan, Latin America, North America

About CTR

CTR is an industry-oriented R&D centre. We help companies to optimise existing procedures and develop new solutions in the field of automated process and quality control by applying the latest technological advances of sensor systems. This leads to greater reliability, smaller designs and thus higher profitability in production. Our expertise covers the complete R&D chain – feasibility studies, conception, tests, prototyping and individual system/product solutions. CTR has been awarded over 50 patents and is also certified according to ISO 9001/2000.

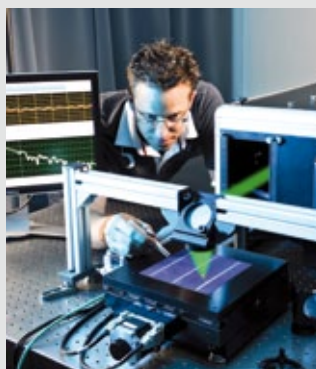


Competence

Optical sensors (x-Ray-UV-VIS-NIR-MIR-IR-THz), spectral imaging, spectroscopy, image processing, high speed raman, laser technology, terahertz spectroscopy, fluorescence spectroscopy, chemometry, statistical classification, software development, handling/automation technologies, optical simulation/design, microsystems, SAW sensor systems.

Management

DI Simon Grasser – Managing Director
simon.grasser@ctr.at
Raimund Leitner – R&D machine vision/molecular imaging
raimund.leitner@ctr.at



Foundation

1997

Staff

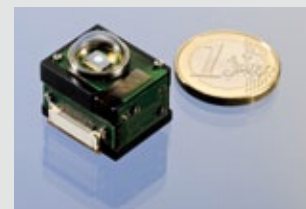
11-50

Applications

Character Recognition, High Speed Analysis, Industrial Inspection, Part Identification, Particle Analysis, Machine Vision, Cell Imaging, Industrial Sorting, Robot Vision 2D/3D, Thermography, Optical Simulation

Industries served

Life Sciences, Medical, Biomedical Science, Pharmaceuticals/Cosmetics/Chemicals, Foodstuffs/Beverages, Plastic/Paper/Wood Industry, Textile/Leather Industry ...



Associations

Other

Regions served

Central Europe, Europe, North America, national



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info@ctr.at
www.ctr.at



About Framos

Since 30 years, Framos GmbH serves customers in the field of industrial image processing. We offer a comprehensive range of sensors, cameras and image processing components as well as development support services and complete solutions for image processing applications.

Our 30 years of experience add up to 30 years of participation in the evolution of a revolutionary new technology. The spirit of innovation and development of our early days has remained at the heart of our company and defines our three areas of business:



- Imaging Products – Components for image processing
- Engineering Support – Development support for cameras, modules and software
- Imaging Solutions – Customized image processing solutions



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See our ad on page **51**

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Management

Dr. Andreas Franz, CEO
Dr. Ronald Müller, Head of Product Marketing

Staff

11–50

Products

Cables, Cameras, Camera modules, Framegrabber, GigE converter, Image Sensors, Interfaces, Lenses, Lighting, Software & Tools

Applications

Character Recognition, High Speed Analysis, Inspection Piece Parts, Me-

trology 2D, Metrology 3D, Part Identification, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Energy/Water/Solar Technology, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics

Associations

EMVA, VDMA, AIA, HybridSens, SwissT.net, Sensors Bavaria

Companies represented

Sony, Aptina, Pleora Technologies, Lumenera, Toshiba Teli, Smartek Vision, Visiosens, Sunex, Fujinon, Schott Moritex, Schneider Kreuznach, AlysiumTech, Pentax Ricoh, PhotonFocus, Videology, Tamron, Boulder Imaging, Pacific Corporation, Trimble, Euresys, SVS Vistek, Vision+Control, Falcon, Efflux, Norpix, VisionTools

About Fujifilm in Europe

In 2011 a merger of Fujinon (Europe) GmbH into Fujifilm Europe GmbH was carried out. Before the merger Fujinon (Europe) GmbH operated mainly in two market segments: Endoscopy Systems and Optical Devices. Over many years Fujinon had been one of the foremost pioneers in the development of optical technology. Based on continuous research, long experience and leading edge technology, Fujinon branded products provide quality of the highest standard in the world for Broadcast and Cine lenses, Binoculars, lenses for CCTV and

Machine Vision applications as well as special custom made optical products e.g. in mobile phones and automobiles. At the time of merger the Optical Devices business was established as a new European Business Domain within the Fujifilm Europe organization.

CCTV and Machine Vision Lenses

The extensive product range of Fujinon CCTV and Machine Vision lenses features the appropriate solution for almost every application.



Products

Optics

Applications

Character Recognition, High Speed Analysis, Inspection Piece Parts, Metrology 2D, Metrology 3D, Part Identification, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Energy/Water/Solar Technology, Medical Technology, Packaging, Precision Engineering/Optics/Machine Vision, Traffic/Logistics

Regions served

Africa, Central Europe, EMEA, Europe



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Fax: +49 211 5089 8900
cctv@fujifilm.eu
www.fujifilm.eu/fujinon



See our ad on page **31**

About the JAI Group

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research.



Besides a broad range of leading-edge 1-CCD and 1-CMOS interlaced/progressive area scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CCD RGB area scan cameras, 2-CCD multi-spectral/HDR cameras plus a complete family of 3-CMOS/4-CCD/4-CMOS line scan cameras. JAI's product program

includes cameras for visible, UV and NIR imaging with GigE Vision, Camera Link, USB 3.0 and CoaXPress interfaces.



See the possibilities

See our ad on page **37**

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camerasales.emea@jai.com
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Management

Jørgen Andersen, CEO
Masao Watabe,
President of JAI Ltd. Japan
Flemming W. Maunsbach,
Group VP of Finance
Wesley Okeke, Sales Director USA
Michael S. Lund, Sales Director EMEA

Foundation

1963

Staff

101-250

Products

Cameras, Interfaces/Cables/
Peripherals, Software, Other

Applications

Character Recognition, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material, Material Testing, Metrology 2D, Part Identification, Particle Analysis, Robot Vision 2D, Symbol Recognition

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Associations

AIA, EMVA, JIA

Regions served

Africa, Asia, Australia, Central Europe, China, EMEA, Europe, Japan, Latin America, North America, national

About Kappa optronics

Expert for Customer Series

The well-established German camera manufacturer focuses on customer-specific industrial camera solutions.



Kappa Zelos Camera Family, 5 MP up to VGA, Camera Link and GigE Vision

Kappa's Strong Point: Rugged Cameras

Kappa develops and manufactures rugged cameras for extreme environments.

De Novo Development

Due to its innovation capacity and profound experience Kappa is an expert partner for challenging visualization projects.

The Kappa Camera Line

Kappa's relatively small but distinct line of high-performance cameras also serves as a platform for economic customer-specific adaptations.



See our ad on page **45**

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Management

Jürgen Haese, CEO
Karl-Heinz Bornemann, Director of Sales and Marketing
Christian Koziol, Kappa USA, Director of Sales
Andrea Tourné, Kappa France, Market Manager France

Foundation

1978

Staff

51-100

Products

Cameras, Consulting, R&D, Software, Other

Applications

Digitalization, Inspection Piece Parts, Inspection Webbed Material, Material Testing, Metrology 2D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Associations

AIA, EMVA, VDMA, Other

Regions served

Asia, Central Europe, China, EMEA, Europe, North America, national

About LMI Technologies Inc.

LMI Technologies Inc. (LMI) is a global leader in 3D sensor measurement technology for industrial measurement and control applications. LMI focuses on constantly evolving the user experience to deliver 3D solutions which enable end users to leverage the benefits of 3D technology for quality control, optimization, and automation in today's factories. LMI's solutions support the 3D measurement needs of many of the world's largest companies supplying equipment into industries such as aluminum casting, rubber and tire manufacturing, wood processing, automotive assembly, and roadway inspection.



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Tel.: +31 45 8507000
Fax: +31 45 5742500

info@lmi3d.com
www.lmi3d.com

Management

Terry Arden, CEO

Foundation

1998

Staff

51-100

Products

Vision Sensors/Smart Cameras/Embedded Systems

Applications

Character Recognition, Digitalization, Error Proofing & Gauging, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material, Metrology 2D, Metrology 3D, Part Identification, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Foodstuffs/Beverages, Glass/Ceramics, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision

Associations

AIA, EMVA, VDMA

Regions served

Africa, Americas, Asia and Pacific, Europe, Middle East, Russia

Companies represented

LMI Technologies



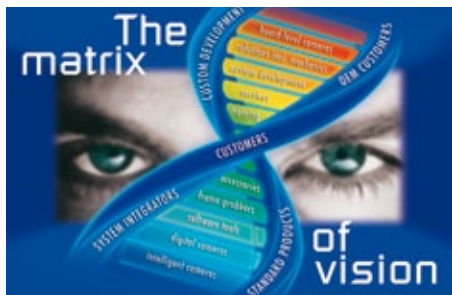
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www.lmi3d.com

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About Matrix Vision GmbH

In addition to frame grabbers, Matrix Vision offers a large spectrum of digital cameras - from USB, GigE with Power over Ethernet to intelligent cameras. A



wide range of USB 3.0 cameras with CMOS sensors up to 14 megapixels will be offered with the USB3 Vision Standard. The mvImpact software provides optimal support for the hardware in applications such as measurement and OCR/OCV, as well as pattern, barcode, data matrix, object

and colour recognition. With mvImpact Acquire, there is a common programming interface for digital cameras on the market.

3D cameras for static and moving objects are one of the main focuses of our current development with an impressive accuracy of up to 1 µm.

Office(s)

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Management

Erhard Meier,
General Manager Business
Uwe Furtner, General Manager Technic
Dietmar Unser, Sales Manager
Marcus Bleise,
International Sales Manager

Foundation

1986

Staff

51-100

Products

Digital Cameras, USB 3.0 Cameras, 3D Cameras, Frame Grabber, Lighting Equipment, Optics, Processors, R&D, Smart Cameras/Embedded Systems, Software, Vision Sensors

Applications

Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material, Material Testing, Metrology 2D, Metrology 3D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Symbol Recognition, Thermography, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Associations

AIA, Symop, VDMA, Other

Regions served

Africa, Asia, Australia, Central Europe, China, EMEA, Europe, Japan, Latin America, North America, national



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Fax: +49 7191 9432 288
info@matrix-vision.de
www.matrix-vision.com

See our ad on page **49**



About Micro-Epsilon

Micro-Epsilon is a medium-sized family-run company which plays a leading role in measurement technology. For more than 40 years we have continuously offered reliable, high performance, unique solutions particularly when high precision measurement or inspection is required. Our product range covers sensors for the measurement of distance and displacement, sensors for IR temperature measurement and color detection, as well as systems for dimen-



sional measurement and defect detection.

Innovative products that provide the very highest levels of precision are created through intensive research and development processes, unique know-how and a broad network of collaborative operations.



MICRO-EPSILON

See our ad on page

3

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www.micro-epsilon.com



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Switzerland
Tel.: +41 71 2500838
info@micro-epsilon.ch

Foundation

1968

Staff

> 500

Products

Vision Sensors/Smart Cameras/Embedded Systems, Other

Applications

Character Recognition, Inspection Piece Parts, Metrology 3D, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics

Associations

VDMA

Regions served

Asia, China, Europe, North America, South/Central America, national

www.fujifilm.eu/fujinon

FUJINON

Maximum choice Maximum precision



Machine Vision lenses from Fujifilm

Special tasks in image processing require a special lens. Fujifilm offers the appropriate solution for almost every application. Whether with a High resolution of 5 Megapixels or with 1.5 Megapixels in Fixed Focal lengths, as Zoom lenses or Fish-Eye lenses, for 3 CCD cameras or UV optics – each model is characterized by first-class Fujinon quality: High resolution and precise optics with minimized distortion for optimal image quality. The compact design also makes it very easy to incorporate these lenses into your existing system.

Fujinon. To see more is to know more.

FUJIFILM

About Opto

Opto is a leading developer and manufacturer of high-precision optomechanical inspection modules and devices, with facilities in Germany, the UK and France. Since its inception in 1980, Opto has been a provider of optical inspection and digital imaging engines to some of the world's most technologically advanced industrial and bioindustrial applications – including high-throughput cellular imaging, laser eye surgery, stent inspection, laser fault injection, and many more.

With this deep heritage in industrialised embedded microscopy and imaging, and



comprehensive international manufacturing capabilities, Opto is able to deliver technically perfect optomechanical inspection solutions in serial production to the most demanding applications in machine integrated vision and inspection.

Office(s)

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Tel.: +33 450 605822
info@opto-france.com

Opto UK Ltd.

Tel.: +44 151 346 2112
info@opto-uk.com

Management

Markus Riedi, CEO
Klaus Flügel, CTO
Martin Price, Int. Sales and Business Development
Patrick Trannois, French Sales
Michael Niemeyer, German Sales

Foundation

1980

Staff

11-50

Products

Consulting, Interfaces/Cables/Peripherals, Marketing, Microscopes, Optical Instruments, Optics, R&D, Software, Turn-key Systems, Vision Sensors

Applications

High Speed Analysis, Inspection Piece Parts, Material Testing, Metrology 2D, Particle Analysis

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Precision Engineering/Optics/ Machine Vision

Associations

AIA, EMVA, VDMA

Regions served

Asia, Australia, China, EMEA, Europe, Japan, Latin America, North America



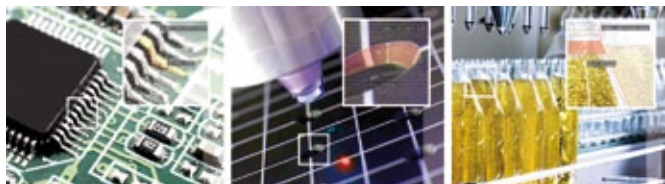
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Fax: +49 89 898055 18
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www.opto.de

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About Stemmer Imaging



Stemmer Imaging is Europe's largest imaging technology and service provider with subsidiaries in Germany, United Kingdom, France, Switzerland and The Netherlands. Our customers have access to a wide variety of imaging products and solutions from the world's leading manufacturers who provide cutting edge vision technology across all product segments, including Stemmer Imaging's independent,

modular programming library for imaging applications, Common Vision Blox (www.commonvisionblox.com).

This broad range of components and solutions, our experience of more than 35 years in imaging and a comprehensive support by a staff of more than 180 employees allows us to offer you everything you need to solve your imaging task.

Stemmer Imaging – Imaging is our passion!

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Foundation

1987

Staff

101-250

Products

Cameras, Consulting, Frame Grabber, Interfaces/Cables/Peripherals, Lighting Equipment, Optics, Processors, R&D,

Smart Cameras/Embedded Systems, Software, Vision Sensors

Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material, Material Testing, Metrology 2D, Metrology 3D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Symbol Recognition, Thermography, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Associations

AIA, EMVA, UKIVA, VDMA

Regions served

Asia, Europe, North America, national



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39



About SVS-Vistek

Digital High-Performance Cameras and Comprehensive Machine Vision Expertise

SVS-Vistek is one of Germany's most innovative manufacturers of industrial cameras, a reliable supplier of components for machine vision purposes, and a specialist for highly integrated imaging systems and solutions. Founded in 1987 SVS-Vistek has more than 20 years of comprehensive expertise in the machine vision market. Since 1999 the company has been developing and manufacturing its own cameras. To this day 100% of SVS-Vistek's cameras are designed and manufactured near Munich

in Seefeld, Germany. The company's cameras are produced under strict quality control, assembled in clean rooms on-site and tested with state-of-the-art testing technology.

Knowledge Transfer

The three core competences of SVS-Vistek are:

- Camera development and production,
- Distribution and integration of imaging components,
- Imaging system solutions development.



Management

Dipl.-Phys. Walter Denk, CEO
 Dipl.-Ing. Ulf Weißer, CEO
 Dipl.-Ing (FH) Andreas Schaarschmidt, CEO

Foundation

1987

Staff

40

Products

Cameras, Frame Grabber, Lighting Equipment, Optics, Software

Applications

Digitalization, Inspection Piece Parts, Inspection Web Material, Material Testing, Part Identification, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Mechanical Engineering/Line Building, Medical Technology, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Traffic/Logistics

Associations

AIA, EMVA, VDMA, Bayern Photonics

Regions served

Asia and Pacific Rim, Europe, North America, South/Central America, national, ROW



SVS-Vistek GmbH
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 Germany
 Tel.: +49 89 9985 0
 Fax: +49 89 9985 79
 info@svs-vistek.com
 www.svs-vistek.com



About Teledyne Dalsa

Teledyne Dalsa is an international technology leader in the design, development, and manufacture of digital imaging products and solutions. In addition, Teledyne Dalsa specializes in the engineering and fabrication of semiconductor components and services. The company currently employs approximately 1,000 people world-wide with sales offices across North America, Europe and Asia which support an international distribution network serving more than 40 countries. Today, Teledyne Dalsa

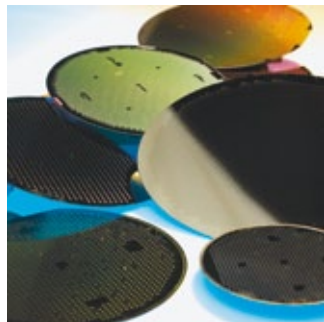


image sensors, cameras, frame grabbers and software are used in thousands of automated inspection systems around the world and across multiple industries.

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 sales.europe@teledynedalsa.com

Management

Brian Doody, CEO

Foundation

1980

Staff

501-1000

Products

Cameras, Factory Floor Automation Solutions, Frame Grabber, Processors, Software, Vision Sensors/Smart Cameras/Embedded Systems, X-ray Equipment

Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material,

Material Testing, Metrology 2D, Metrology 3D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Symbol Recognition, Thermography, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Platforms supported

Windows/Linux/DSP,ARM/FPGA/x86/32 & 64 bit

Associations

AIA, EMVA, JIJA

Regions served

Asia, China, Europe, Latin America, North America, national



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About Volpi

Volpi develops and produces fiber optic and optoelectronic systems and equipment. The two Volpi plants are situated in the center of the major European and American economic zones. In its target markets Life Science (Diagnostics, Bio-Pharma), Medical Technology, Machine Vision and Industrial Endoscopy Volpi is the strategic partner for sophisticated OEM components, high-quality standard products and private label solution.

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Volpi – Light is vision.



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Associations

AIA, EMVA, Other

Regions served

Central Europe, Europe, North America

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Products

Cameras, Embedded PC-cameras, OEM Cameras, Subminiature Cameras, X-Ray

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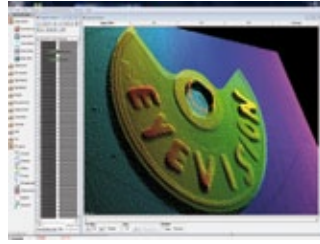


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D

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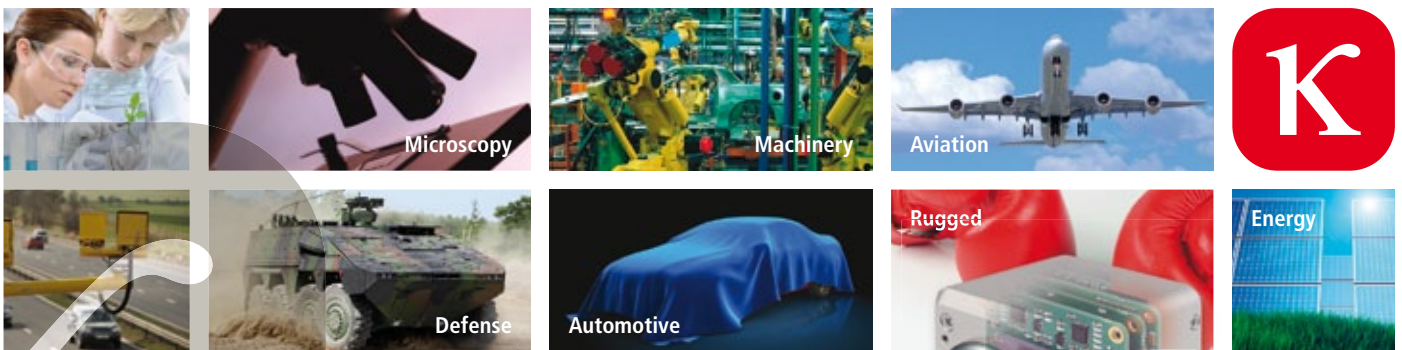


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Solution Provider

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Producer

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Producer, Research Facility, Solution Provider

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MZ

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A

Integrator

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RV

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Machine Builder/OEM

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B

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Solution Provider

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Producer

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Solution Provider

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Producer, Solution Provider

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Integrator, Solution Provider

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Producer

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Integrator

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Producer

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Producer

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Producer

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Solution Provider

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Producer

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Producer, Solution Provider

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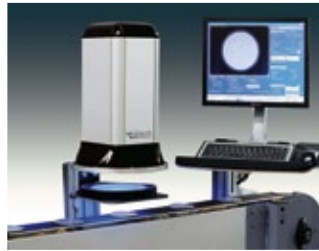
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HH

Solution Provider

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Consultant, Other

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Producer

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Solution Provider

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Consultant

Vision Ventures is an independent, internationally operating boutique M&A advisory that focuses on SMEs active in machine vision and optical technologies. Our services cover strategy consulting, identification and improvement of value drivers – especially in preparation of company transactions -, market-based enterprise valuation and the end-to-end management of sell-side and buy-side M&A. For investors we also provide expert opinions on enterprise value, business plan and market environment.

VISION VENTURES

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Producer

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Integrator, Solution Provider

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Producer, Solution Provider

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Distributor, Integrator, Producer, Solution Provider

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Solution Provider

VMT Vision Machine Technic Bildverarbeitungssysteme GmbH · Mallaustr. 50-56, 68219 Mannheim, Germany, Tel.: +49 621 84250 0, info@vmt-gmbh.com, www.vmt-gmbh.com



Producer

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VRmagic

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Integrator, Solution Provider

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Machine Builder/OEM, Solution Provider
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Solution Provider
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Solution Provider
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Integrator, Solution Provider
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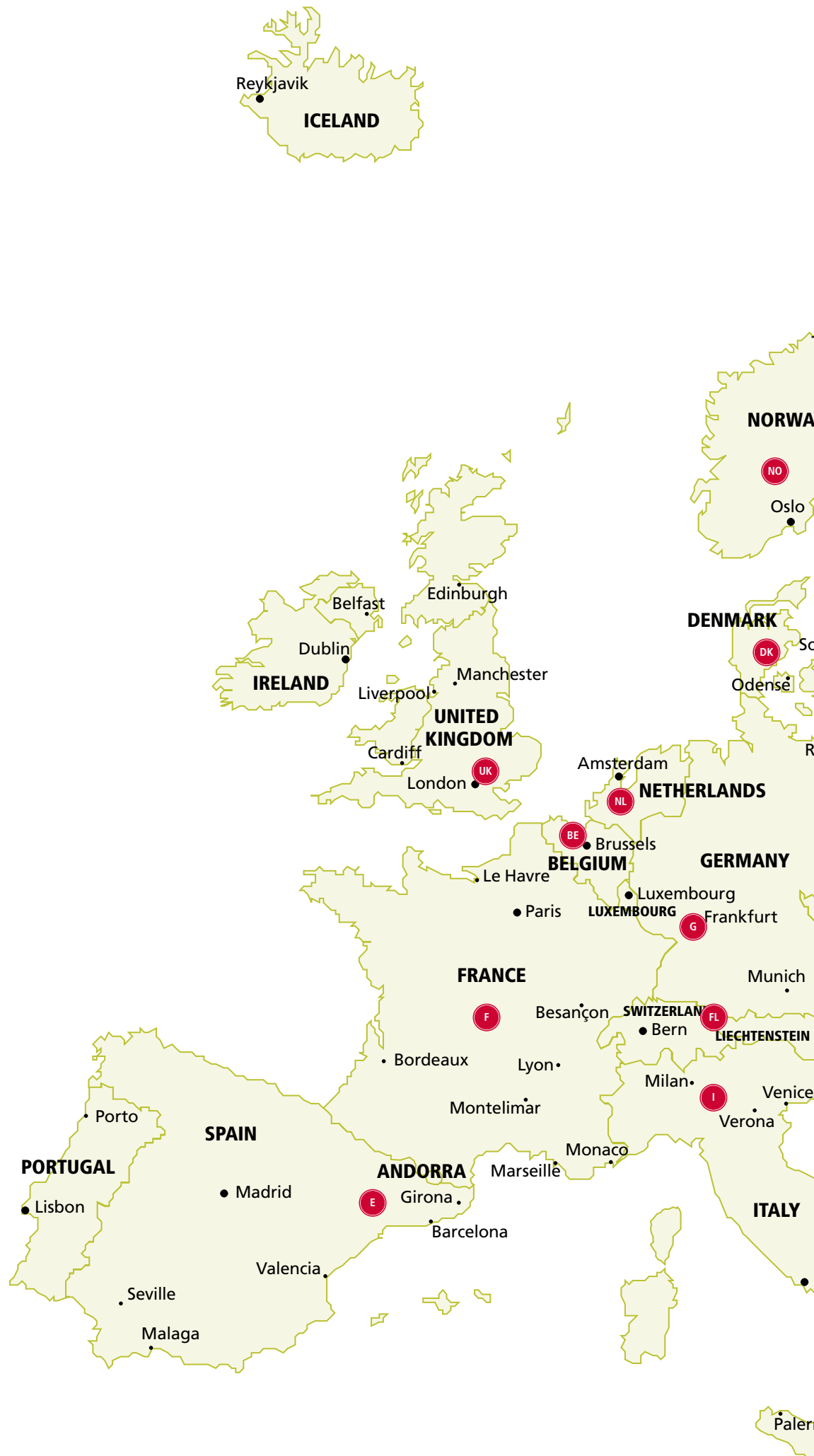
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Distributor, Solution Provider

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Association



The EMVA has more than 114 members representing 20 nations. Its aim is to promote the development and use of machine vision technology and to support the interests of its members - machine vision companies, research institutions and national machine vision associations. EMVA focuses on standardization, statistics, the annual EMVA Business Conference and other networking events, public relations and marketing.

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Solution Provider

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Solution Provider

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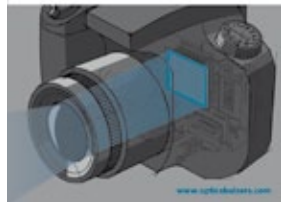
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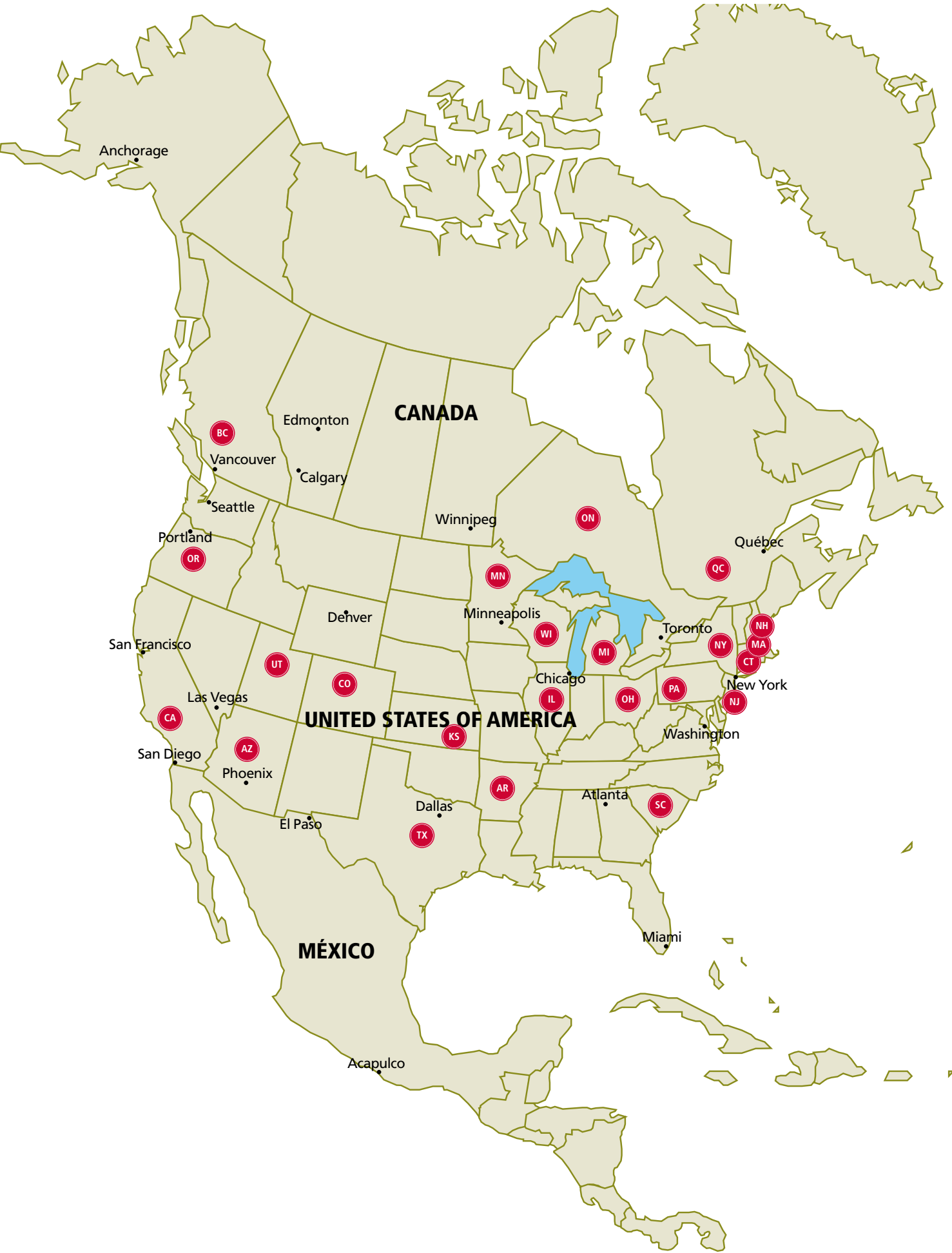
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Digital West Imaging · 450 Mountain View Road, 92021 El Cajon, CA, United States of America,
Tel.: +1 866 593 1900, sales@DigitalWestImaging.com, www.DigitalWestImaging.com



Producer

Directed Perception · 890C Cowan Road, 94010 Burlingame, CA, United States of America,
Tel.: +1 650 692 3900, Fax: +1 650 692 3930, sales@dperception.com, www.DPerception.com



Solution Provider

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Producer

EDT · 1400 NW Compton Drive, Suite 315, 97006 Beaverton, OR, United States of America,
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Producer

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Producer

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Producer

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Producer

FJW Optical Systems, Inc. · 322 N Woodwork Ln, 60067-4933 Palatine, IL, United States of America, Tel.: +1 847 358 2500, irsales@findscope.com, www.findscope.com



Integrator, Solution Provider

FSI Technologies Inc. · 668 Western Ave., 60148 Lombard, IL, United States of America,
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Producer

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Tel.: +1 408 262 5772, Fax: +1 408 262 0962, info@gevicam.com, www.gevicam.com



Producer

Manufacturer of standard and custom camera cable assemblies include CameraLink, Mini Camera Link, FireWire, USB, GigE and other analog and digital cable assemblies. Highflex and industrial grade cable assemblies are available for robotic and other high flex applications. Additional products include bulk cable, power supplies, and fiber optic extenders.



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MN

Machine Builder/OEM, Producer, Solution Provider

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CT

Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-CCD and 1-CMOS interlaced/progressive area scan cameras, JAI is a leading provider of multi-imager cameras including 3-CCD RGB area scan cameras, 2-CCD multi-spectral/HDR cameras plus a complete family of 3-CMOS/4-CCD/4-CMOS line scan cameras.



See the possibilities

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Fax: +1 408 383 0301
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CA

Producer

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MA

Distributor

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NH

Producer

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AZ

Producer

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ON

Producer

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WI

Producer

Matrox Imaging · 1055 St. Regis Blvd., H9P 2T4 Dorval, QC, Canada, Tel.: +1 514 822 6020, Fax: +1 514 822 6273, imaging.info@matrox.com, www.matroximaging.com

QC

Producer

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PA

Consultant

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MI

Producer

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Producer, Solution Provider

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Producer

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Integrator, Machine Builder/OEM, Solution Provider

Norman N. Axelrod Associates · 445 East 86th Street, 10028 New York, NY, United States of America, Tel.: +1 212 741 6302, naxelrod@axelrodassociates.com, www.axelrodassociates.com



Producer

StreamPix 5 is a high speed digital video recording software for single or multiple cameras. Includes support for a wide selection of GigE Vision, USB2, Analog, Fire-wire and Camera link cameras and frame grabbers using original vendor API's. Supports time stamping, synchronization between multiple cameras, bayer conversion, IrIgb and data acquisition. Compatible with various compression codecs. Acquire at up to 500 fps x 1,280 x 1,024 x 8 bits to disk from single or dual cameras. NorPix also provides turnkey systems including software, hardware, triggering and IrIgb timing.



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Producer

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Solution Provider

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Producer

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Integrator

Orus Integration Inc · 1109 Hwy 13, H7W 5J8 Laval, QC, Canada, Tel.: +1 450 688 3151, Fax: +1 514 221 2026, ldicaire@orusintegration.com, orusintegration.com



Producer

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Producer

Pleora Technologies specializes in the mission of real-time video over Gigabit Ethernet (GigE) networks and is the co-founder of the GigE Vision standard. Our end-to-end networked video connectivity solutions help industrial camera manufacturers and vision system integrators avoid

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Producer

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Producer

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Solution Provider

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Producer

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Producer

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Producer

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Machine Builder/OEM

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Integrator

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Producer

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Producer

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Producer

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MI

Consultant

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BC

Distributor

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KS

Machine Builder/OEM

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ON

Solution Provider

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QC

Producer

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CA

Producer

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NY

Consultant, Distributor, Integrator

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MA

Producer

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NY

Machine Builder/OEM

Advanced video imaging technology and high resolution cameras such as Toshiba's 3CCD color cameras and their remote head camera family has earned Toshiba America's Imaging Systems Division the distinctive reputation for offering the most advanced imaging solutions to the industrial and scientific communities. Visit www.cameras.toshiba.com for more information.

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CA

Solution Provider

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CA

Distributor, Integrator

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OH

Integrator, Solution Provider

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MA

Producer

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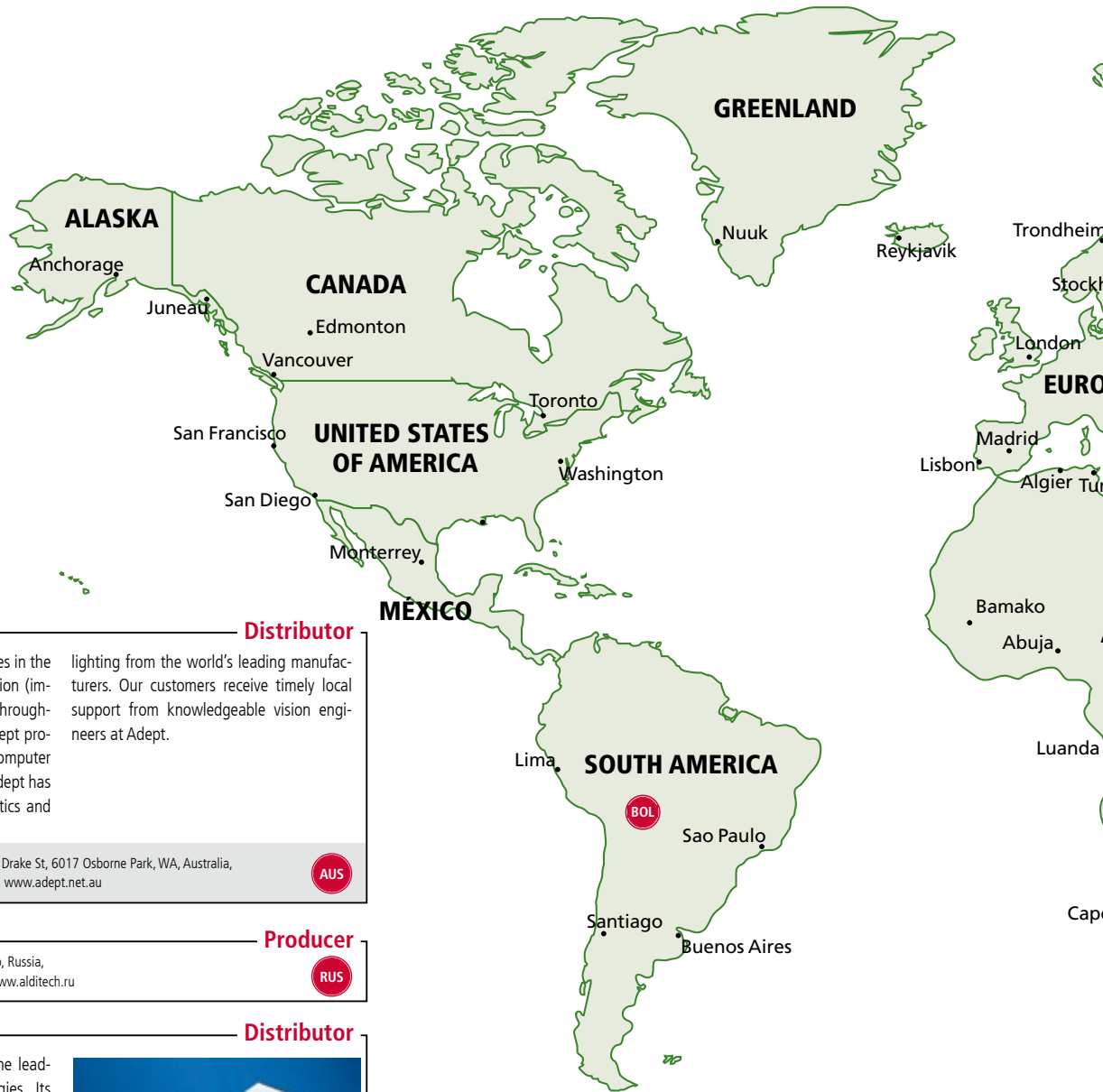
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Distributor

Adept Electronic Solutions specialises in the supply and support of machine vision (imaging) systems and components throughout Australia and New Zealand. Adept provides all components required for computer vision and automated inspection. Adept has the broadest range of cameras, optics and lighting from the world's leading manufacturers. Our customers receive timely local support from knowledgeable vision engineers at Adept.

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Producer

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Distributor

Baumer has established itself as the leading company for vision technologies. Its wide range of digital cameras, vision sensors and further image processing products with cutting edge technologies provides highest quality for industrial, scientific and medical applications. Next to vision products Baumer is known as the premier innovator for precision sensors, motion control, identification solutions, gluing systems and process instrumentation for the automation market.



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Distributor, Solution Provider

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Producer, Solution Provider

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Producer

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Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-CCD and 1-CMOS interlaced/progressive area scan cameras, JAI is a leading provider of multi-imager cameras including 3-CCD RGB area scan cameras, 2-CCD multi-spectral/HDR cameras plus a complete family of 3-CMOS/4-CCD/4-CMOS line scan cameras.



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Association

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Producer

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Machine Builder/OEM

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Producer

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Integrator

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Machine Builder/OEM

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Producer

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Producer

Toshiba Teli Corporation develops and manufactures CMOS and CCD cameras for machine vision, industrial automation, inspection, measurement, robotics, 3D, pick and place, AOI & medical imaging. The product assortment includes Gigabit, Firewire, PoCL, Cameralink, Linescan, analog, RS170 (EIA), CCIR, near infra-red, remote head cameras, mini-cube and HD CMOS cameras using CCD and CMOS sensors up to 12 megapixel. Toshiba Teli Corporation also manufactures OEM cameras and HD LCD Monitors for the medical industry. Please visit our website to request more information or a demonstration of our products including our new GigE (POE) and USB 3.0 camera called "Bee" and 6.5 Mega CMOS camera running a full 85 FPS. Our products are subject to total in-house manufacturing from the procurement and supply of components to assembly, wiring and inspection.

We build on established technology with state-of-the-art innovations that support constant efforts to maintain the very highest quality levels in our products.



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Integrator

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Quad-port GigE Vision Frame Grabber



Adlink's GIE64+ , a quad-port GigE Vision frame grabber, features PoE (Power over Ethernet), IEEE 1588 Precision Time Protocol and smart PoE application programming interface. The GIE64+ supports PCI Express x4 lane, four independent Gigabit Ethernet ports, and GigE Vision camera compliance. With multi-channel synchronization, PoE interface, IEEE 1588 PTP and Smart PoE support, the GIE64+ cuts cabling requirements by as much as 60%, significantly reducing maintenance burdens and boosting ease of use. The GIE64+ supports IEEE 1588, providing a software trigger mode for multi-camera synchronized captures.

The GIE64+ utilizes a lone Ethernet cable for power supply, data transfer, and synchronization. In a 4-channel image system, only four cables are required, representing a clear reduction in TCO (total cost of ownership). In addition, the GIE64+ supports a smart PoE application programming interface, enabling easy power status programming and auto detection of compatibility with both PoE and non-PoE devices.



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See our profile on page **36**

Vision Sensor O2V

The new vision sensor O2V of ifm electronic for packaging, production and quality control checks objects for presence, size, position or completeness. Instead of a defined contour the user determines relative features used by the sensor to assess an object or a scene. Within adjustable tolerances the sensor determines characteristics such as the area of an object (number of pixels), the inner and outer object size of an irregular object geometry, roundness or compactness or the number of available holes.



Numerous evaluation parameters enable a wide range of applications. 32 scenes with up to 24 different models can be saved in the unit. All parameters can be set conveniently via the menu-guided parameter setting software.

The interface is used for image transmission and connection to the controller.

The O2V can be used as a stand-alone system: camera, illumination and evaluation are integrated into a compact metal housing with the protecting rating IP 67. The temperature range of -10...60°C enables a wide range of applications. The Ethernet process in-



ifm electronic gmbh
 Friedrichstr. 1
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 Germany
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 Fax: +49 201 2422 200
 info@ifm.com
 www.ifm.com

See our profile on page **24**

3D Pro Laser and 3D Pro Laser Mini



Key Features:

- Compact, cylindrical form factor for easy mounting
- Preset or adjustable focus options
- Excellent uniformity
- Line widths of 15 µm at 120 mm
- Available options include: wavelengths, power levels, fan angles, intensity control and strobe

Structured Light Lasers for Machine Vision

The 3D Pro Laser and 3D Pro Laser Mini have been specifically designed for the machine vision market. They combine a compact cylindrical form factor for easy mounting with a customer-specific fixed focus for precision alignment. Due to their industry-standard mechanical dimensions (19 mm and 10 mm,) they can be utilized either for new functions or as drop-in replacements for existing applications requiring structured light lasers. 3D PRO lasers generate an extremely uniform laser line that is ideally suited for 3D applications, high-speed automated inspection and other.

Key Applications:

- 3D Machine Vision
- Dimensional scanning
- High precision alignment, pointing, positioning
- Automated inspection



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 www.prophotonix.com

See our profile on page **62**

New High Sensitivity CMOS Line Scan Cameras

TVI's new camera series is based on new 2048 pixel CMOS sensor with large pixels (20 µm x 20 µm) and high line rate.



New cameras represent the latest camera technology on the market. High sensitivity and high line rate together with the web browser based, easy-to-use user interface and many other advanced features make the cameras to be really today's leading edge technology.

These new cameras are the ideal components for food sorting, print inspection and other web inspection applications, just a few to mention. These cameras are also first members of JAI's Sweep and Sweep+ camera series as TVI Vision became a part of JAI Group in April 2012.

New cameras are prism based 3CMOS and 4CMOS colour line scan cameras; and monochrome CMOS camera. These new series cameras will be available with both CoaXPress and Camera Link interface. Monochrome camera will be available also with GigE interface.

All new cameras have maximum line rate of 80 klines/s and dynamics range up to 14 bits. All camera models have the Ethernet port for monitoring, test image grabbing and remote firmware updating.

These new cameras are the ideal components for food sorting, print inspection and other web inspection appli-



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 Fax: +358 207 579 519
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 www.tvivision.com

See our profile on page **58**

New LED Light Source for Machine Vision

The new LED light source intraLED 3 from Volpi has a light intensity of over 500 lumens (measured on a 1-meter light guide with an active diameter of 13.5 mm). Activation is done either manually via the integrated RS-232 interface (optional USB) or via the multiport with digital and analog input. The intraLED 3 is available in two variants and is thus compatible with light guides from Volpi and Schott-Fostec. Given these specifications, most applications with 100 watt or 150 watt halogen light sources can now be implemented with an intraLED 3. Replacement of conventional halogen light sources offers the user numerous advantages: the long service life of 50,000 hours, the maintenance-free design and the substantially lower power consumption noticeably reduce total operating costs. The compact enclosure allows use on a small surface and the threaded rails (M4) present on four



sides facilitate smooth system integration.



Light is Vision.

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Easy – New Intelligent Camera Platform

The new intelligent camera platform D3 by VRmagic was designed with usability, flexibility, and performance in mind. The D3 features a 1 GHz ARM Cortex-A8 Core with floating point unit running Linux and a 700 MHz C674x DSP with FPU, which is available for performance-demanding algorithms. 2 GB DDR3-800 RAM are available as memory. A Gigabit Ethernet interface provides fast and efficient transmission of image data. The extended software portfolio ranges from image processing libraries such as Halcon and open source software like OpenCV to a Mono compatible .NET interface. The embedded system supports a multitude of interfaces, which offers you a high level of flexibility. Besides a standard platform with a fix set of interfaces such as Ethernet, USB, and GPIOs, customers can select a com-



combination of interfaces that perfectly matches their requirements.



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Smallest SWIR Line-Scan Cameras



Machine vision inspection using Xenics' uncooled Lynx cameras provides you high resolution information about quality assurance measurements. The SWIR cameras match perfectly the absorption spectra of low level photon emissions and provide increased subsurface penetration depth images.

The Lynx cameras are a flexible solution with industry-standard GigE Vision, Power over Ethernet or Camera-Link interface, and at a later stage CoaXPress. Furthermore you can change integration times from 1 μ s to several minutes. You will reach optimal image quality choosing from various configurations in High Sensitivity mode (HS) or High Dynamic Range

Mode (HDR) and multiple gain settings. The cameras are offered in multiple line resolutions: 512, 1024 or unique 2048 which substitutes for costly multicamera solutions.



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www.xenics.com

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Fastest USB3 Vision and Embedded PC-Cameras

USB3 Vision camera series xiQ: With this line of extraordinary small, lightweight, fast, efficient and highly integrated cameras, Ximea offers a unique value and performance proposition for the industrial market place.

PC-cameras Currera: The IP67 compatible PC based intelligent camera Currera-R comprises a complete PC and an industrial camera in a small housing. The Currera-G offers up to 90 GFlops through the innovative use of an APU (dual-core CPU and GPU).

USB2.0 camera series xiMu: Ximea's smallest camera with a size of only 15x15x9 mm offers big performance in tight spaces.

Scientific and High performance cameras for the most demanding applications requiring ultimate image quality acquisition. With resolutions up to 16 Mpix, cooled and uncooled models, and signal fidelity of 14+bits,



xiCe and xiRay cameras generate best-in-class images.



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Aqsense www.aqsense.com	Eltec Elektronik www.eltec.com	Gevicam www.gevicam.com	InRay Solutions www.inrays.com
Artray www.artray.co.jp	Energid www.energid.com	Goldlücke Ingenieurleistungen www.giib.de	in-situ www.in-situ.de
Asentics www.asentics.de	Epix www.epixinc.com	Graphikon www.graphikon.de	Ircam www.ircam.de
attentra www.attentra.de	Erhard + Leimer www.erhardt-leimer.com	HaSoTec www.hasotec.com	IS Imaging Solutions www.imaging-solutions.de
Baumer www.baumer.com			

Isomorph www.isomorph.it
Isra Vision www.isravision.com
IVS www.industrialvision.co.uk
Japan F.A. Systems Corporation www.jfas.co.jp
JasVisio www.visionmint.com
Joanneum Research www.joanneum.at
Kappa opto-electronics www.kappa.de
Karlheinz Hinze Optoengineering www.hinze-opto.de
Klughammer www.klughammer.de
Kvant www.kvant.sk
Lambda Photometrics www.lambdaphoto.co.uk
Lambda Research Corporation www.lambdaresearch.com
Leica Geosystems www.leica-geosystems.com/ metrology
Leica Microsystems www.leica-microsystems.com
Leutron Vision www.leutron.com
LMI Technologies www.lmitechnologies.com
Luster LightVision Tech www.lusterinc.com
Math & Tech Engineering GmbH www.mathtech.eu
Matrix Vision www.matrix-vision.de
Matrox Imaging www.matrox.com/imaging
MaxxVision www.maxxvision.com
Menzel Vision and Robotics www.menzelab.com
Metronom Automation www.metronom-automation.de
Micro Epsilon www.micro-epsilon.com
Micro-Epsilon Eltrotec www.eltrotec.com

Microscan www.microscan.com
Microsystems www.microsystems.it
Mikromak Service www.mikromak.com
Mitutoyo www.mitutoyo.de
msiVision www.msivision.com
MVTec Software www.mvtec.com
National Instruments www.ni.com
neogramm GmbH & Co. KG www.neogramm.de
Neurocheck www.neurocheck.com
Norpix www.norpix.com
OBE Ohnmacht & Baumgärtner www.trevista.net
Odem Technologies www.odem.co.il
Olympus www.olympus-europa.com
Omron www.industrial.omron.de
Optical Research Associates www.opticalres.com
Optis www.optis-world.com
Optometron www.optometron.de
Orbis www.orbis.eu
Parameter www.parameter.se
Photonfocus www.photonfocus.com
pi4_robotics www.pi4.de
Pleora Technologies www.pleora.com
Polytec www.polytec.com
Profactor www.profactor.at
Qualimatest www.qmt.ch

Rapidform www.rapidform.com
Rauscher www.rauscher.de
RH Engineering www.rhengineering.de
Rubroeder www.rubroeder.de
SAC www.sac-vision.de
Schmachtl www.schmachtl.at
Second2None www.visiondragon.com
Sedeco Vision Components www.sedeco.nl
SensorDesk, Inc. www.SensorDesk.com
Silicon Software www.silicon-software.de
Simon IBV www.simon-ibv.de
SmartSurv www.smartsurv.de
SPG Data 3D www.spgdata3d.com
Stemmer Imaging www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung www.stz-ilmenu.de
Supercomputing Systems www.scs-vision.ch
SVS Vistek www.svs-vistek.com
Symco www.symco.co.jp
Systematic Vision www.systematicvision.com
Tekno Optik www.teknooptik.se
Teledyne Dalsa www.teledynedalsa.com
Tema www.temavision.com
The Imaging Source www.theimagingnsources.com
The MathWorks www.mathworks.com
Thermosensorik www.thermosensorik.de

Tordivel www.scorpionvision.com
TriVision www.trivision.dk
TYZX, Inc. www.tyzz.com
unique vision www.unique-vision.net
Univision www.univision.it
Van de Loosdrecht Machine Vision www.vdlmv.nl
Vega Technology Group www.vegatcgroup.com
visicontrol www.visicontrol.com
Violaser www.vannier-photelec.fr/visiolaser
Vision & Control www.vision-control.com
Vision Components www.vision-components.com
Vision Machines www.vision-machines.com
Vision N www.vision-n.de
Vision Tools www.vision-tools.com
Visionlink www.visionlink.it
Vistek www.vistek.com
Vitronic www.vitronic.com
Vizzion, Inc. www.vizzion.com
Weiss Imaging and Solutions www.weiss-imaging.de
Wenzel www.wenzel-cmm.com
X-Rite www.xrite.com
Zertrox www.zertrox.de

Vision Sensors, & Smart Cameras & Embedded Systems

Acal BFi Germany
www.bfiophtilas.com

Active Silicon
www.activesilicon.com

Adaptive Vision
www.adaptive-vision.com

AIT Göhner
www.VisionAndID.com

Alfvision
www.alfvision.de

AMS Technologies
www.ams.de

Applied Scintillation Technologies
www.appscintech.com

Asentics
www.asentics.de

Awaiba
www.awaiba.com

Banner Engineering
www.bannerengineering.com

Basler Vision Technologies
www.baslerweb.com

Baumer
www.baumer.com

Camsensor Technologies
www.camsensor.com

Cmos Vision
www.cmosvision.com

CMOSIS
www.cmosis.com

Cognex
www.cognex.com

Compar
www.compar.ch

Computer BV
www.computerbv.de

Computer Dynamics
www.cdynamics.com

Cosyco
www.cosyco.de

Datalogic Automation
www.automation.datalogic.com

Datasensor
www.datasensor.com

de Man Industrie-Automation
www.deman.de

Diaplous
www.diaplous.com

Directed Perception
www.DPerception.com

di-soric
www.di-soric.de

Eltec Elektronik
www.eltec.com

Erhard + Leimer
www.erhardt-leimer.com

EVT Eye Vision Technology
www.evt-web.com

Fabrimex Systems
www.fabrimex-systems.ch

FastVision
www.fast-vision.com

Festo
www.festo.com

FiberVision
www.fibervision.de

Finger
www.finger-kg.de

FSI Technologies
www.fsinet.com

G4 Technology
www.g4.com.tw

Graphikon
www.graphikon.de

Hans Turck
www.turck.com

Hema
www.hema.de

HGV Vosseler
www.hgv.de

IBN
www.ibn-gmbh.de

ifm Electronic
www.ifm.de

Image House
www.imagehouse.dk

Image S
www.imagessrl.com

Imaging Solutions Group
www.isgchips.com

Imago Technologies
www.imago-technologies.com

Imagsa Technologies
www.imagsa.com

IMR Automatisierungstechnik
www.imr-le.de

Infaimon
www.infaimon.com

IOS
www.ios-web.de

IOSS
www.ioass.de

ipf Electronic
www.ipf-electronic.de

IS Imaging Solutions
www.imaging-solutions.de

Isra Vision
www.isravision.com

ISW
www.isw-gmbh.biz

Itava
www.itava.de

Japan F.A. Systems Corporation
www.jfas.co.jp

K + P Krempien + Petersen
www.kup-image.de

Kamera
www.kamera.com

Keyence
www.keyence.de

Kontron
www.kontron.com

Lambda Photometrics
www.lambdaphoto.co.uk

Leutron Vision
www.leutron.com

Leuze Electronic www.leuze.com		Second2None www.visiondragon.com	
Lippert Adlink Technology www.adlinktech.eu		Sedeco Vision Components www.sedeco.nl	
LMI Technologies www.lmitechnologies.com		SensoPart Industriesensorik www.sensopart.de	
Lord Ingenierie www.lord-ing.com	OptoMotive www.optomotive.si	Sensor to Image www.sensor-to-image.de	Turck www.turck.de
Luster LightVision Tech www.lusterinc.com	Orbis www.orbis.eu	Shape Drive GmbH www.shape-drive.com	TYZX, Inc. www.tyzz.com
Matrix Vision www.matrix-vision.de	Panasonic Electric Works www.panasonic-electric-works.de	Sharp Microelectronics www.sharpsme.com	Vega Technology Group www.vegatcgroup.com
Matrox Imaging www.matrox.com/imaging	Parameter www.parameter.se	Sick www.sick.com	Vialux www.vialux.de
MaxxVision www.maxxvision.com	Pepperl & Fuchs www.pepperl-fuchs.com	Siemens www.siemens.de/simatic-sensors/mv	Videor Technical www.videor.com
MaZet www.mazet.de	Peter Scholz Software + Engineering www.scholzsue.de	SKS Vision Systems www.visionsystems.fi	visicontrol www.visicontrol.com
Menzel Vision and Robotics www.menzelab.com	Phytec Messtechnik www.phytec.de	Smartray www.smartray.de	Violaser www.vannier-photelec.fr/visiolaser
Micro Epsilon www.micro-epsilon.com	pi4_robotics www.pi4.de	SmartSurv www.smartsurv.de	Vision & Control www.vision-control.com
Micro-Epsilon Eltrotec www.eltrotec.com	PMDTec www.pmdtec.com	Soliton Technologies www.solitontech.com	Vision Components www.vision-components.com
Microscan www.microscan.com	Pollux www.pollux.com.br	Sony www.pro.sony.eu/vision	Vision Tools www.vision-tools.com
Microsystems www.microsystems.it	Polytec www.polytec.com	Stemmer Imaging www.stemmer-imaging.com	Visionlink www.visionlink.it
msiVision www.msivision.com	PPT Vision www.pptvision.com	Supercomputing Systems www.scs-vision.ch	Vistek www.vistekas.com
National Instruments www.ni.com	Profactor www.profactor.at	SVS Vistek www.svs-vistek.com	VRmagic www.vrmagic.com
NeuPro Solutions www.neupro-solutions.com	Pulsotronic www.bildverarbeitung.pulsotronic.de	Symco www.symco.co.jp	Webview www.webspec.com
Neuricam www.neuricam.com	Qualimatest www.qmt.ch	Tattile www.tattile.com	wenglor sensoric www.wenglor.com
Norpix www.norpix.com	Rauscher www.rauscher.de	Tekno Optik www.teknootoptik.se	Werth Messtechnik www.werthmesstechnik.de
OBE Ohnmacht & Baumgärtner www.trevista.net	RSB Optotechnik www.rsb-optotechnik.de	Teledyne Dalsa www.teledynedalsa.com	Wintriss Engineering www.weco.com
Odem Technologies www.odem.co.il	SAC www.sac-vision.de	Tichawa Vision www.tichawa.de	Ximea GmbH www.ximea.com
Omron www.industrial.omron.de	Schmachtl www.schmachtl.at	topSenso www.topsenso.de	Xiris Automation Inc. www.xiris.com
Opto Sonderbedarf www.opto.de	Schunk www.schunk.com	Tordivel www.scorpionvision.com	Zertrox www.zertrox.de

Vision Systems, Turnkey Solutions, Integration Services

3D Alliance
www.3dalliance.de

3D Shape
www.3d-shape.com

a&a technologies
www.aa-technologies.de

ABB
www.abb.com

Act Smartware
www.act-smartware.de

Adaptive Vision
www.adaptive-vision.com

Adept Electronic Solutions
www.adept.net.au

Adept Technology
www.adept.de

AGR International
www.agrintl.com

AIT Göhner GmbH
www.VisionAndID.com

aku.automation GmbH
www.aku-automation.de

alfa vision systems
www.alfavisionsystems.com

Alfavisision
www.alfavisision.de

Alliance Vision
www.alliancevision.com

Altair Industries, Inc.
www.altairindustriesinc.com

Applied Vision
www.appliedvision.com

ASB automation technology
www.asb-technologie.de

Asentics
www.asentics.de

ATM Vision
www.atmvision.com

ATN Automatisierungstechnik
www.atn-gmbh.com

attentra
www.attentra.de

Austrian Research Centers
www.smart-systems.at

Automation Technology
www.automationtechnology.de

Automation W+R
www.automationwr.de

Autoware
www.autoware.it

AVT Advanced Vision Technology
www.avt-inc.com

Balluf
www.balluf.de

Basler Vision Technologies
www.baslerweb.com

Baumer
www.baumer.com

Beratronc
www.beratronc.de

Bertram Elektrotechnik
www.bertram-bevern.de

Bi-Ber
www.bildererkennung.de

Böwe Systec
www.bowesystec.com

Braintech
www.braintech.com

Brainware Solutions
www.brainware-solutions.de

BST International
www.bst-international.com

Camsensor Technologies
www.camsensor.com

Carl Zeiss OIM
www.zeiss.de

Ceres Vision GmbH
www.ceresvision.de

China Daheng Group
www.daheng-image.com

CLK
www.clkgmbh.de

Cognex
www.cognex.com

Coherix
www.coherix.com

Compar
www.compar.ch

Computer BV
www.computerbv.de

Cosyco
www.cosyco.de

CoSynth
www.cosynth.com

**Cruse Leppelmann
Kognitionstechnik**
www.clkgmbh.de

Cyth Systems
www.cyth.com

Datalogic Automation
www.automation.datalogic.com

Datapixel
www.datapixel.com

Datasensor
www.datasensor.com

de Man Industrie-Automation
www.deman.de

DE software & control
www.de-gmbh.com

desconpro engineering
www.desconpro.de

Diaplous
www.diaplous.com

Digital West Imaging
www.DigitalWestimaging.com

Divisoft
www.divisoft.com

DMC Vision & Motion
www.dmc-vision-motion.de

Dr. Schenk Industriemesstechnik
www.dr.schenk.com

**dr. schwab Inspection
Technology GmbH**
www.schwabinspection.com

Dunkley International
www.dunkleymachinevision.com

nkey ion

Dutch Vision Systems
www.dvs-vision.de

e3tam
www.e3tam.com

Eckelmann
www.eckelmann.de

Edixia
www.edixia.com

EHR
www.ehr.de

Eines
www.eines.es

Electronic Systems
www.electronicssystem.it

Ellips
www.ellips.nl

Eltromat
www.eltromat.de

Emhart Glass
www.emhartglass.com

Epix
www.epixinc.com

Epson Deutschland GmbH
www.epson.de/robots

Erhard + Leimer
www.erhardt-leimer.com

EVK DI Kerschagl
www.evk.biz

EVT Eye Vision Technology
www.evt-web.com

EyeC-UK Limited
www.eyec-ukandireland.co.uk

Fast
www.fast-corp.co.jp

Faude Automatisierungstechnik
www.faude.de

**FAW Freudenberg Anlagen-
und Werkzeugtechnik**
www.faw-freudenberg.de

FDS Research
www.fdsresearch.si

FiberVision
www.fibervision.de

Finger
www.finger-kg.de

Fritz Pauker Ingenieure GmbH
www.pauker-ingenieure.com

Fuchs engineering
www.fuchs-engineering.de

Fuetec
www.fuetec.de

Futec Europe SRL
www.futeceurope.com

G4 Technology
www.g4.com.tw

GBS
www.gbs-ilmenau.de

Gefasoft
www.gefasoft.com

Gefat
www.gefat.de

GF Messtechnik
www.gfmesstechnik.de

GFal
www.gfai.de

Gidel
www.gidel.com

Goldlücke Ingenieurleistungen
www.giib.de

GOM
www.gom.com

Göpel electronic
www.goepel.com

GPP Chemnitz mbH
www.gppc.de

Graphikon
www.graphikon.de

GreCon
www.grecon.de

Grenzbach Algoscan
www.algoscan.com

HaSoTec
www.hasotec.com

Heitec
www.heitec.de

Helms Technologie GmbH
www.helms-technologie.de

Hengstmann Solutions
www.hengstmann.com

HGV Vosseler
www.hgv.de

i2s
www.i2s-linescan.com

I3 tech
www.i3tech.de

ibat
www.ibat-berlin.de

ibea
www.ibea.de

Icos Vision Systems
www.icos.be

ICW [industrie-elektronik]
www.icw-news.de

iiM
www.iimag.de

Ikegami
www.ikegami.de

Image House
www.imagehouse.dk

Image S
www.imagesssl.com

Imago Technologies
www.imago-technologies.com

i-mation
www.i-mation.de

imess GmbH
www.imess.com

Impuls
www.impuls-imaging.com

IMR Automatisierungstechnik
www.imr-le.de

INB Vision
www.inb-vision.com

Industrial Vision Systems
www.industrialvision.co.uk

Infaimon
www.infaimon.com

InfraTec
www.infratec.de

inos Automationssoftware
www.inos-automation.com

InRay Solutions
www.inrays.com

Insensiv
www.insensiv.de

in-situ
www.in-situ.de

Inspectron
www.inspectron.ch

InSystems Automation
www.insystems.de

Intego
www.intego.de

Intopii
www.intopii.fi

IOS
www.ios-web.de

IOSS
www.ioass.de

Ipasort www.ipasort.com
Irida Labs www.iridalabs.gr
IS Imaging Solutions www.imaging-solutions.de
Isa Industrietechnik www.isaweiden.de
Isomorph www.isomorph.it
Isra Vision AG www.isravision.com
ISW www.isw-gmbh.biz
isys Industrielle Bildverarbeitung GmbH & Co. KG www.isys-vision.de
Itech engineering www.itech-ag.ch
IVS www.industrialvision.co.uk
J&P Vision www.jupvision.de
Japan F.A. Systems Corporation www.jfas.co.jp
JasVisio - Vision Artificial www.jasvisio.com
JLI Vision www.jli.dk
Joanneum Research www.joanneum.at
K + P Krempien + Petersen www.kup-image.de
Kaiser Computersysteme www.isotronika.de
Kdorf Automation www.kdorf.de
Keyence www.keyence.de
Kirin Techno-System www.kirintechno.co.jp
KMS Vision Systems www.kms-vision.de
L&P www.lp-gmbh.de
Laetus www.laetus.com

Leuze Electronic www.leuze.com
Limes www.limes.com
Lincoln Laser Company www.lincolnlaser.com
Machine Vision Technology www.machine-vision-technology.co.uk
Menzel Vision and Robotics www.menzelab.com
Meta Vision Systems www.meta-mvs.co.uk
Metronom Automation www.metronom-automation.de
mevisco www.mevisco.com
Micro Epsilon www.micro-epsilon.com
Micro-Epsilon Eltrotec www.eltrotec.com
Microscan www.microscan.com
Mikrotron www.mikrotron.de
Modi Modular Digits www.modi-gmbh.de
Moser Industrietechnik www.moser-gmbh.de
MSC Inspection www.msc.fr
msiVision www.msivision.com
neogramm GmbH & Co. KG www.neogramm.de
NeuPro Solutions www.neupro-solutions.com
Neuricam www.neuricam.com
Neurocheck www.neurocheck.com
Neurotechnology www.neurotechnology.com
Nexus Engiconsults www.nexusengiconsults.com
Nikka Research Deutschland www.nikka-research.com

Nikon Metrology GmbH www.nikonmetrology.com
Nokra www.nokra.de
Norman N. Axelrod Associates www.axelrodassociates.com
Norpix www.norpix.com
Northwire www.northwire.com
OCS www.ocsgmbh.com
Octum www.octum.de
Omron www.industrial.omron.de
Opsis www.opsis.de
Optel Vision www.optelvision.com
OptoFidelity Oy www.optofidelity.com
OptoNova www.optonova.se
Orbis www.orbis.eu
Orbotech www.orbotech.com
Orus Integration www.orusintegration.com
Otto Vision Technology GmbH www.otto-jena.de
Panasonic Electric Works www.panasonic-electric-works.de
Parameter www.parameter.se
Pattern Recognition Company www.pattern-recognition-company.de
Paul Leibinger GmbH www.leibinger-group.com
PCE Pharmacontrol www.pharmacontrol.de
PCS Industries www.pcs-industries.co.uk
Pepperl & Fuchs www.pepperl-fuchs.com

Perceptron www.perceptron.com
Peter Scholz Software + Engineering www.scholzsue.de
Phytec Messtechnik www.phytec.de
pi4_robotics www.pi4.de
Pilz www.pilz.de
Pixargus www.pixargus.de
Plasmo Industrietechnik www.plasmo.eu
POG Präzisionsoptik Gera www.pog.eu
Pollux www.pollux.com.br
Polygon www.polygon-technology.de
Polytec www.polytec.de
PPT Vision www.pptvision.com
Pressco Technology www.pressco.com
Profactor www.profactor.at
Prüftechnik Schneider & Koch www.prsuk.de
Pulsotronic www.bildverarbeitung.pulsotronic.de
Qualimatest www.qmt.ch
Quiss www.quiss.com
RAA Vision www.raavision.com
R&W Industrieautomation www.r-u-w.de
Radix Controls www.radixcontrols.com
rbc robotics www.rbc-robotics.de
Recognitec www.recognitec.de

RH Engineering
www.rhengineering.de

Rohwedder
www.rohwedder.com

RSB Optotechnik
www.rsb-optotechnik.de

Rubroeder
www.rubroeder.de

Rudolph Technologies
www.rudolphtech.com

SAC
www.sac-vision.de

Scanware electronic
www.scanware.de

Schmachtl
www.schmachtl.at

Schönherr Elektronik
www.schoenherr-elektronik.com

Second2None
www.visiondragon.com

Seidenader
www.seidenader.de

Sensor Control
www.sensorcontrol.com

Seritec
www.seritec.de

Serview
www.serview.net

Servo-Robot
www.servorobot.com

Sidonia Systems
www.sidoniasystems.de

Signum
www.signum-vision.de

Simac Masic
www.simacmasic.nl

Simon IBV
www.simon-ibv.de

SL Tec
www.sltec.de

Smartray
www.smartray.de

Solex
www.solexvision.com

Solving3D
www.solving3d.de

Soma
www.soma.de

SPG Data 3D
www.spgdata3d.com

Steinbichler Optotechnik
www.steinbichler.com

Stöhrmann Systemtechnik
www.stoehrmann.de

Stratec Control Systems
www.bbull.com

**STZ Qualitätssicherung und
Bildverarbeitung**
www.stz-ilmenau.de

**Sundance Multiprocessor
Technology**
www.sundance.com

Surface Inspection
www.surface-inspection.com

SVS Vistek
www.svs-vistek.com

Symacon Engineering
www.symacon.de

Symetix
www.symetix.com

SysCon
www.syscon-vision.de

Systech
www.systech-tips.com

Systematic Vision
www.systematicvision.com

Tattile
www.tattile.com

TechnoTeam
www.technoteam.de

Teledyne Dalsa
www.teledynedalsa.com

Tema
www.temavisio.com

Thermosensorik
www.thermosensorik.de

Tichawa Vision
www.tichawa.de

Tordivel
www.scorpionvision.com

TriVision
www.trivision.dk

TST Technological Solutions
www.tst.pt

TYZX
www.tyzx.com

unique vision
www.unique-vision.net

Univision
www.univision.it

Vega Technology Group
www.vegatcgroup.com

Vester Elektronik
www.vester.de

Videometer
www.videometer.com

View-Factor
www.view-factor.com

Vigitek
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Viscom
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visicontrol
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Visimation
www.visimation.de

Visio Nerf
www.visionerf.com

Visiolaser
www.vannier-photelec.fr/visiolaser

Vision Automation
www.visionautomation.dk

Vision Experts
www.vision-experts.com

Vision Machines
www.vision-machines.com

Vision Projekt
www.vision-projekt.de

Vision Tools
www.vision-tools.com

vision-consult Bildverarbeitung
www.vision-consult.com

Visionlink
www.visionlink.it

VisioTek
www.visiotek.com.tr

Visolution
www.visolution.de

Visotect
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Vistek
www.vistekas.com

Visuelle Technik
www.visuelle-technik.de

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