Dallmeier Electronic is a well-known designer and manufacturer of digital video recorders (DVRs) based in Regensburg, Germany. The Dallmeier DVRs are installed in many major CCTV installations throughout the world and they are renown for their stability (their Operating System is based on Linux) and simplicity in operation.

I was invited to visit their head office, their assembly plant and the new administration building, all in Regensburg, in the beginning of March this year. I was very pleased and excited to talk to the man behind this company - Mr.Dieter Dallmeier.

I owe special thanks for this interview to Erwin Ullmann, Dallmeier's engineer responsible for the overseas market including Australia.

Vlado: Mr. Dieter Dallmeier, first of all, on behalf of our readers I would like first to thank you for accepting the proposal for an interview for the company biography section in our magazine.

Dallmeier: You are very welcome.

Vlado: I am sure that many people know Dallmeier products, but there are many that haven't heard of you. Hence, my first introductory question is: Who are Dallmeier Electronic, how and when did you start making digital video recorders?

Dallmeier: I have a master degree in radio and television technology, which justifies me to run my own company, and to school young people. In 1984 I started my own company Dallmeier Electronic.

Vlado: What was the first activity that you did in your company?

Dallmeier: My hoby has always been video technology. But this was not the initial engagement of Dallmeier Electronic. My co-workers and me were at that time with Bosch, responsible for various projects, general electronics and service. Although most of the time we worked in the medical department, we were very sometimes involved in development of closed circuit video equipment for surveillance applications.

Vlado: Was this also in Regensburg?

Dallmeier: Yes, it was in Regensburg.

Vlado: Today, when people that know Dallmeier products are asked: " What is so special about Dallmeier?" - no doubt most of them will say: "Digital recorders based on Linux operating system and wavelet compression." My next question Dieter is: Why Linux and why wavelet?

Dallmeier: First of all, it should be known that we have analysed other operating systems as well. But one of the key reasons for selecting Linux is the much better and easier hardware implementa-

Dieter Dallmeier with the first and the current DVR models

tion. Secondly, the stability and lastly, the speed of the OS.

Vlado: Did you know from the very beginning of your DVR development that you are going to use Linux, or this was an evolution of ideas?

Dallmeier: No, our first prototypes were running on DOS, and this was also not that bad. Our first prototype based on DOS was in 1991/92. Our DOS DVR was a very stable machine. We started using Linux OS around 1996, and don't forget Linux dates only from not long before this. It was a very long and hard way to decide which is to be the OS and which direction to go, but I think we made the right decision. We are pleased to see that

more and more people turn to this OS for various industrial application, including the most demanding Internet web services. And don't forget, in addition to the stability and speed, Linux is free and this ultimately means better prices to the customers.

Vlado: I am interested what happened in this period in between, i.e. between 1992 and 1996?

Dallmeier: From 1984 until 1991/92 Dallmeier was mainly a consultancy and installation company for video security applications and therefore we were always in contact with the end user. We knew what the market needed and what we could do to fulfil such need. We had a group of very capable young engineers, including Petar Tomic and Klaus Adler who were one of the first to start playing with digital recorders, storing images on hard disk, initially without compression. This started 1991/92 and designing hardware and software were interesting experiments. This was usually after hours, while we were searching for new ideas.

Vlado: Where did this activity take you next?

Dallmeier: We decided to make a prototype and show it to some bigger company. When it was finished we decided to get in touch with Grundig in Nurnberg, which is only an hour drive from here, and we showed them the prototype. It happened that they were very interested and asked us to make a

The first DVRs were made for Grundig (now plettac)

product based on this prototype. So Grundig showed our first DVR at the Security Show in Essen in 1992, where it was accepted extremely well and then Grundig decided to take exclusivity for this product.

Vlado: This is interesting. In this chain of events, what happened next historically? After you started dealing with Grundig what was the first major project you had your recorder installed at?

Dallmeier: The main idea behind that product was to always keep such a complex technology as simple as possible, both for the end users and for the installation companies. This was the very first and basic approach we had at Dallmeier. The first installations were done by Dallmeier itself, just before Grundig started to have that product within their product range.

Vlado: What were they usually, petrol stations, banks…?

Dallmeier: The problem was that the product was very expensive and the market wasn't really there for such a product. And that is why we decided then to start with the service station concept. So that means that there was software written specially for service stations, and then we did the first major installation with Shell service stations. And this was then very well accepted by the market, so then the market began speaking of a service station solution. This then became a very well known in the petrol station industry - as a service station solution.

Vlado: This has just lit some

memory lights in my brain. I remember you mentioned to me in our conversation earlier, that the name of your executable file in the DVRs operating system is "Tank",

is actually the German word for a petrol station.

Dallmeier: That's right. It comes from "Tankstelle." After the service station solution there came the bank solution so that means we modified

the service station recorder into a bank recorder. So that was a very long time of course. From the beginning until 1996 it was a very low volume market, we sold around about 250 to 300 recorders per year. The market wasn't really there for such products at the beginning.

Vlado: How has the business progressed since that period 1996-1997?

Dallmeier: Plettac, the new owner of Grundig security electronic, came to Dallmeier in 1996 with the proposal at Crown casino in Melbourne, and they wanted to go digital. And we then saw our chance in the request from Crown casino and we became very motivated in offering them a solution for their problem. So we developed and assembled the prototype for Crown casino. The Crown casino people plus some CR Kennedy people came to Nurnberg to see the prototype. The same day we got the order. Australia was really somehow the key to the market, because with these projects in Australia we started to develop faster and faster and we began to modify the products. Then after Crown casino came Star City casino in Sydney, in which

Current models

Part of the factory staff

you were involved as a consultant. And that is really how we started to grow. Burswood casino followed that. So having these three opportunities in Australia - Crown, Star City and Burswood, is really what opened up many doors for us.

Vlado: This next question may not be retrospective, but who are the major customers for you, aside from the casinos, the ones that you can stand back proudly and say this is our project?

Dallmeier: Well, there are quite a few. On one side there was this big market of petrol stations, and another many bank applications, where we worked together with Siemens, and then of course some specialised projects such as the Ajax stadium in Amsterdam, German Railway, Nurnberg race track in Germany, and so on. By now we have over 10,000 machines out there in the market, and as you know, we are not always in direct contact with the end users since we work through distributors, such as C.R.Kennedy in Australia.

Vlado: That's very impressive. Many CCTV users are only introduced to digital recording just now, but you have been working with

them for quite some time?

Dallmeier: I think it is important for you and the readers to see that our success as one of the major DVR manufacturers hasn't come overnight, but we have been working on these solutions for almost 10 years now. We have been continuously developing and some times had difficulties, both technically and financially but we have never given up. Also, there is a lot of work behind each product, such as

testing and marketing. As you and most of the readers know, we have chosen the Linux operating system for our DVRs which required certain adaptation for our processing and drivers to be written, which had to be extensively tested. This is why we can now offer DVRs with unprecedented stability and functionality.

Vlado: I've seen your assembling plant in Regensburg, and I can understand how difficult and complex would be to have all the bits and pieces all available and compatible when the machines are put together. Also, variations and compatibility of various PC hardware must be a problem from time to time.

Dallmeier: Yes this is correct, but we like to confront ourselves with that task. The biggest advantage of our manufacturing site is, that we are able to handle all these different options of our systems. This means for our customers, that we can provide them with systems according to their wishes and that we are able to deliver every possible system within 5 days after placing the order. Also we are now employing many more young and talented people that can

Dallmeier Electronic's assembly line

Part of the Dallmeier Electronic administration staff

resolve all possible problems.

Vlado: How large is Dallmeier electronics in terms of people, at the moment?

Dallmeier: Internal and external roughly fifty people. There are 18 developers of software, hardware, plus network technology.

Vlado: So everything that Dallmeier does is either made and designed by Dallmeier, or sub-contracted to someone who's given instructions on what to do for your applications?

Dallmeier: The most important thing, of course, is that you have the man power, but this is a world wide problem at the moment - the "specialists" are very hard to get. But now we have the people together for further developments and that's why you have to somehow think different so as not to have everybody internally, that's why you then have to outsource certain things like hardware, software, and certain bits and pieces of the product. The main thing is that we have the coordination here in our hands. It didn't grow that much from 1992 (when it started) until 2000, regarding employees. It went from 2 in the beginning to 30 employees last year. But the biggest growth actually happened from last year to this year, we increased by 20 employees.

Vlado: Would you mind sharing, in rough numbers, how many digital recorders were sold last year?

Dallmeier: We sold roughly 4,500 last year. They were mainly DMS-180 and DMS-18.

Vlado: So your growth is exponential, as the industry accepts it, prices come down your expertise grows…

Dallmeier: Yes, but our main aim is not so much to have high quantities, but having our product as a symbol for high and medium range applications.

Vlado: Whom do you see then today, as a tough competitor?

Dallmeier: There are a lot of products out at the moment, which are giving us all very good ideas of course, for the future as well. When you come to the German market, there are 2 or 3 companies left here, so that's not a big issue for us here in Germany. For the world market that's a very difficult question because there are very many different ideas and approaches out there. So our market share in Germany, for example, is 40%, and that shows you what is our market position here.

Vlado: Of all the countries, which is your largest or most important market?

Dallmeier: There are a lot of countries left at the moment. We have worldwide request for these products. But our main markets apart from Germany are Australia, UK, South Africa, Italy, Austria, and Switzerland. Of course in other countries as well, but they are not, as markets, as big as Germany, Australia, UK. We believe that the UK will become the strongest market, after the German market, and in Australia we see an important market not only volume wise but also for new strategies and ideas.

Vlado: At the moment you use

The always busy technical support team

Erwin Ullmann and Dieter Dallmeier in the meeting room

wavelet compression with the Analog Devices chips. From a technical point of view, where do you see that going, considering the new JPEG 2000?

Dallmeier: In the past people always compared compression technologies and compression algorithms. Of course every compression technique has its advantages and disadvantages, and we think for the future it will be very important to have a product where the first question will not be what kind of compression algorithm you are using. So of course when we look at international standards, like JPEG 2000, we will also have products, which will fulfil the criteria set out by those standards. But there are a lot of other projects going on where you have to have something different, so we don't want to say we are just keeping JPEG 2000 and nothing else. We want to be open in what directions we can go.

Vlado: What are the new plans and developments for the future?

Dallmeier: Last year was very important for us, getting people on board for new developments, and we see the future very wide open for us. JPEG 2000 and MPEG 2 will be both big issues for us, and also network technology. These are

probably the three main areas for new developments. We think the market will change over the next couple of years. The IT market and the security market will come together soon.

Vlado: Where do you see the future of CCTV?

Dallmeier: That's a very difficult

question of course. We have been in the market for sixteen years now, and what we've seen in the last three years is that it is changing very rapidly, more so than over the previous ten years. So we are not able to see the future, that's very difficult to say, but the most important thing is

to keep the company as flexible as possible. Whoever can adapt very fast to any changes in the market and new developments, will be successfull in the future. We are going to do that.

Vlado: We have a lot of readers all over the world, but many of them are installers and young people that want to get involved in CCTV. What message would you send to them regarding new technologies and adapting to the industry and utilising its resources, keeping with developments, making the industry better etc?

Dallmeier: Well the main problem is the rapid development of the CCTV and computer industry, it is very hard to keep up the education, or training, to keep up with it. We started at the end of last year what we call the partnership concept. What we do is we train our distributors, and then they have to train their installation companies. The idea behind it is, that at the end of the day we will have certified installation companies that will be able to install such kind of systems professionally. Essentially the best advertising you can get is if at the end of the day your customer is satisfied with the product and the service, and that is what we are trying to achieve with our partnership concept. For now we are developing it in Germany and when we feel that it is running at 100% and showing results we will extend it to other countries. That will be a benefit, we believe, to all parties involved.

Vlado: Mr.Dallmeier, on behalf of the "CCTV focus" readers and myself I would like to thank you very much for your hospitality and the time you have spent for us during this wonderful stay in Regensburg. [][][]