

CONNECTIONS 27



090.2031



Convincing cabling solutions

SC-RJ IP67: fit for the most arduous service conditions

Home wiring – from installer to system integrator

R&M security system – now for fiber optics too

Generational change – in the financial centres of La Poste

«Get more» – continuity ensures innovative strength

Continuity is and remains one of our most important success factors as a medium-sized family enterprise – continuity in management, continuity in our strategy, continuity in customer relationships and continuity in the area of research and development.

Customer-oriented culture of innovation

Our new developments always take place in close cooperation with our customers, for only a customer-oriented culture of innovation can guarantee that we will be able to further consolidate our technological lead in the future. It is this technological lead that provides you, our valued customers, with products and service packages that are amongst the best anywhere in the world.

Focus pays off

For 40 years we have been true to our motto: acting instead of reacting. Instead of complaining, we take advantage of the opportunities within our reach and continually optimise our innovative strength.

To this day it has been the objective of all R&M employees to develop even better solutions in situations where others give up – always mindful of the R&M maxim of focusing on our core competencies and of not doing anything ourselves which others can do better. Our core competencies involve the production and distribution of layer 1 products. With this single-minded attitude we have been successful in improving our market share even in difficult economic times.

Our customers get more

Our success is not only based on an uncompromising focus, but also on an uncompromising commitment to quality. For example, we are the only manufacturer that during fully-automated assembly performs a 100 % security check on the RJ45 Cat.6. This gives us a technological lead and enables us to offer our customers maximum security.

Today R&M has the easiest and safest connection technology, not only for electrical conductors such as twisted pair cables and coaxial cables, but also for heavy-current cables and optical conductors such as fiber optic cables and plastic optical fiber. Get more @ R&M – this is borne out by numerous technological milestones from our company. For example:

- SC-RJ, the first SFF fiber optic connector for GOF and POF
- RCO Power, the first uninterrupted IDC for 230/240 V round cable
- RCC45®, the highly variable connector for data, telephony and audio/video, including integration of TP, power and POF.

You will find more on our latest developments and projects in this edition of our customer magazine.

I would like to thank you for placing your trust in us, and for giving us new challenges, day in, day out.



010.3146

A handwritten signature in black ink that reads "M. Reichle".

Martin Reichle
CEO

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Home wiring: from installer to system integrator

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010.2746

On a wide front, R&M, in cooperation with trade associations and pilot projects, is driving forward the market of multimedia home wiring. Planners and installers are provided with expert support in order to be able, as future system integrators, to meet the requirements of customers who want to have an «intelligent house». Installation with far-sightedness is called for.

There is a strong trend towards home wiring or multimedia home wiring. Moreover, this is a growth market that has to be taken seriously, a fact that has been recognised not only by consumer electronics and software manufacturers: the entire world of cabling, too, is gearing up for the changed requirements in the home environment.

Commitment to lasting development

With its business segment Residential, R&M has positioned itself very well in the market. As Switzerland's leading cabling manufacturer, we are fully committed to lasting development. We want to pass on our enthusiasm for the application opportunities and benefits of home wiring. By participating in numerous committees, R&M and its partners are succeeding in winning over the installation industry to these new technologies. A point has been reached where the entire training philosophy in the installation trade is being reconsidered.

From installer to system integrator

The installer trade is in a state of flux. Nowadays, a system integrator (SI) is in demand as a single point of contact. The end customer expects a single contact of this kind for technology issues, and trade associations and educational establishments alike are adapting to this – in a supra-national way.

What yesterday used to be the electrical installer for power and communication, or the radio/TV installer, will tomorrow be the system integrator for «intelligent living». Innovative installation enterprises will in future be characterised by this type of

expert staff and in this way will be able to secure their viability and survivability. A «home technology manager» will be the ideal contact partner for the end customer, with the former being well-versed in the technologies relating to building, security, communication and multimedia, or at least knowing what products, solutions and companies can be used for such projects.

Experience that R&M is studying in conjunction with expert committees such as GNI (Building Network Institute, Switzerland) and experience that has been gained in the context of the initiative «intelligent living» (ZVEI – Central Association of the Electrical Technology and Electrical Industries, Germany) confirm the trend towards the system integrator.

Planning and consultancy expertise together with R&M

From today's perspective it seems important that installers and electrical-system designers are competent (both in their dealings with end customers and architects), are innovative, and are able to point out today what will be required tomorrow. Together with all those involved in the project, installers and designers will be future-oriented and will plan «installations with far-sightedness». This requires them to successfully market themselves and their services, and to provide target-oriented information and guidance to customers. R&M and the trade associations will comprehensively support them in this task by providing practical and informative materials to this effect.

Simple message – great effect

Simple messages and clear scenarios of the future are important in this endeavour, as demonstrated by the example of empty pipes. While the topic may not be «cool», many architects, planners and clients still do not recognise the sheer extent of long-term requirements in the area of cabling infrastructure that must be in place to satisfy the extreme growth in multimedia in the home well into the future.



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The future detached home of the Rest-Rivero family is still only a reality on screen.



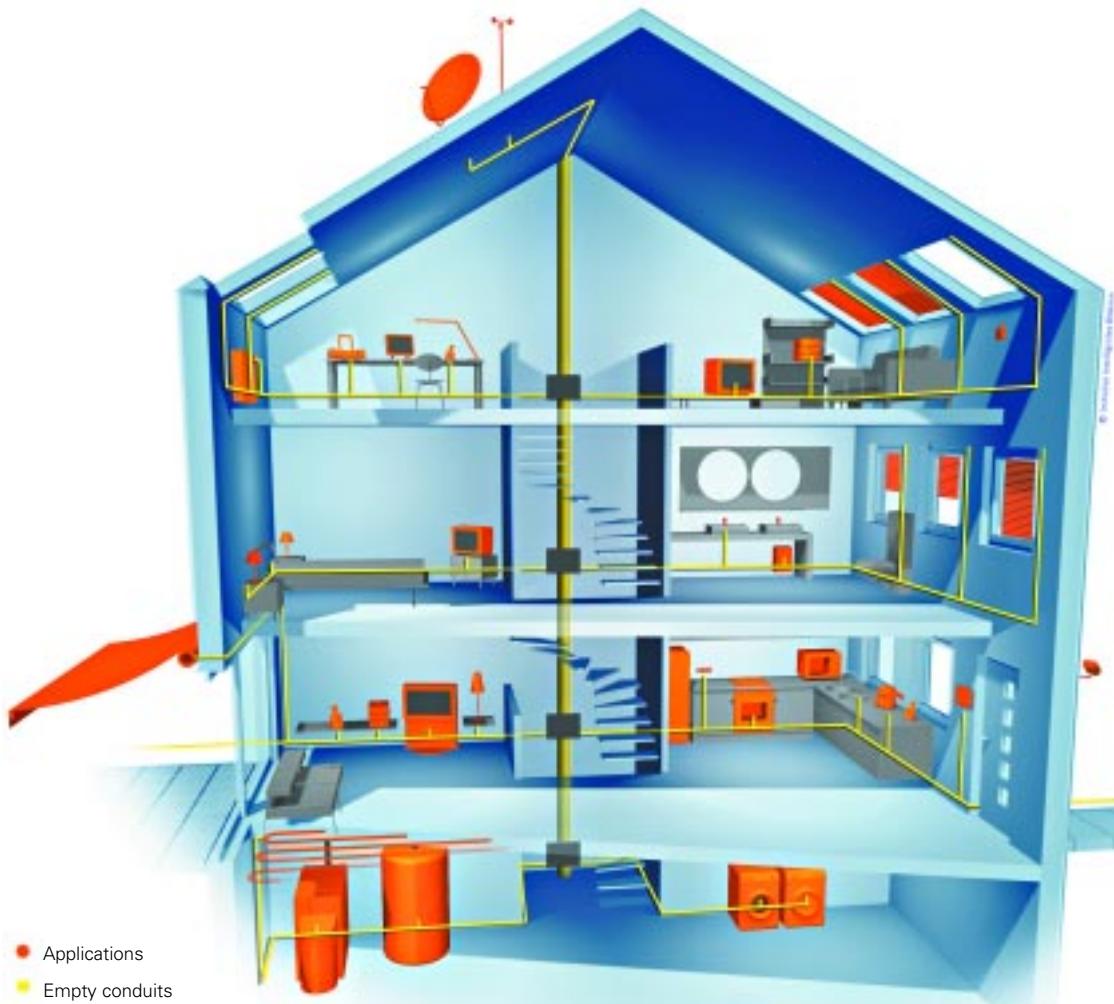
010.3156
The Rest-Rivero family want to know whether a smart home is affordable for an «ordinary» Swiss family.



010.3196
In discussion: multimedia outlet specialist Ralph Brügger, energy specialist Alois Huser, client Hampi Rest, architect Christian Gredig, control technology expert Thomas Meissen, internet expert Thomas Elmiger, and bus specialist Richard Staub (behind the camera).

Only a well-planned and installed base infrastructure makes it possible to retrofit or expand cables and outlets independently of the media. For, what today is the playroom of the children might tomorrow be the sound studio of an adolescent, or the home office of a student. An infrastructure designed to be modified or retrofitted saves a lot of money in the long run.

Experience gained from functional buildings shows that 70 per cent of technology expenditure is incurred in expansion and conversion, mostly as a result of short-term thinking and planning and a design that is not sufficiently customer-oriented. In other words, an infrastructure designed to be modified or retrofitted can save immense capital outlay if false economy in this very infrastructure during the planning phase is avoided.



The diagram shows an arrangement of empty conduits and the applications that can be networked in this way at some time in the future if the need arises.

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Image: ZVEI «Intelligent Living» initiative

In order to gain empirical data from residential construction too, R&M participates in numerous study and research projects as well as pilot and reference projects. These projects have drawn a significant response from the media and have increased the demand for solutions in the residential area, i.e. the demand for home wiring systems (HWS).

Smarthouse Chur is another current project. Accompanied by R&M, the parties involved are looking into a very specific and practical way of implementing a net-

worked house. The aim is to prove that «intelligent living» and a future-oriented way of building pay dividends (the cost structure is closely examined) because the value and usefulness of the building increase – be it as a rented or as an owner-occupied home.

This project once more confirms that «intelligent living» is not a topic from «Starship Enterprise», but a project that can usually be implemented without any problems with the means available today. A good base infrastructure is no longer a

question of finances since networking of the living space can be expanded in stages, depending on the budget situation at the time.

On our website (see information box below) you will not only find the story of Smarthouse Chur, which provides information on the ongoing project development, but also further interesting reports on a host of options for realising «intelligent living» in various building dimensions.

Support provided by R&M to planners and installers

Services of R&M for planners and installers who take up the challenge of home wiring systems (HWS):

- Early market and trend information
- Business management, marketing support
- Documentation
- Planning materials
- Training sessions

Furthermore: a top-quality, compatible and future-oriented product range for the networked home, with multimedia outlet, communication distributor, modular cabling systems and much more.

Pilot projects and information sources

Information on R&M's participation in joint initiatives and pilot projects of modern home wiring, as well as on a number of trade information centres is available from the following website: www.rdm.com/residential

Additional websites:

- www.intelligenteswohnen.com
- www.cleverwohnen.ch
- www.g-n-i.ch
- www.home-electronic.ch



Contact makes Contract

Werner J. Signer
Director
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rdm.ch



Task force and single combatants, diplomats and relations managers, seismographs and trend scouts all at the same time: these are the team members of R&M Sales International. They operate in highly sensitive, intensely competitive and extremely heterogeneous markets. We invite you to get to know our marketing organisation Sales International in more detail.

Whether a carrier in Latin America or a computer group in Australia is in the process of planning new large projects, whether a cable assembler in eastern Europe drops the price by a cent tomorrow, or whether recabling of a factory is being discussed in Dublin ... the people at R&M Sales International have the ambition to know it yesterday, to make a quote today, and to do business tomorrow.

Our Sales International staff experience the meaning of globalisation daily. There is no textbook for it. It means above all to be in the middle of an informal global network and to be in non-stop contact with industry sectors, clients, agents and distributors. After all, customers too are purchasing in the global market. Working in Sales International means being a diplomat in pricing policy, at times having years of patience, while at other times acting with the speed of a stockbroker, and in all one's dealings, time and again, holding up the brand name R&M.

For a year now, global, customer-specific marketing activities of R&M have been covered by Sales International (SI) (see also Connections 26, page 11). In a brief interview, the four managers of SI give you an insight into their business.



Renato de Paoli (46),
Head of Sales International Carrier,
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His market: telecommunication and carriers in countries where R&M does not have its own marketing organisation. Special region: Cuba.

His experience: 20 years in the carrier business



How is your market developing at present?

Due to the worldwide slump in the market in 2001/2002, all telecommunication companies had to put up to 90 per cent of their investment on the backburner. Since the end of 2003 one has been able to feel that the economy has been improving. Investment has firmed; it is still restrained but clearing on the upswing.

What are you doing to cultivate your market?

I am working closely together with agents who are trusted by the carriers. We look after existing customers by active key account management, with the objective of generating additional potential, and we acquire new customers by way of tenders, partly with a niche strategy, partly with a displacement strategy. All this requires a very good knowledge of the countries concerned.

What do you find fascinating in this market?

For years on end to continually cultivate and look after the market (technical, commercial, personal aspects) with the aim of creating a win-win situation. The personal relationships that result from these endeavours. Promoting customers' trust in all the persons at R&M who are in direct contact with customers and who support them.



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Adrian Isele (38),
Head of Sales International Enterprise,
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adrian.isele@rdm.ch

His market: enterprise and industrial cabling (LAN), certified R&M distributors, installers, consultants, architects, end customers in all those countries where R&M does not have its own marketing organisations.

His experience: long-term international involvement in marketing, sales, project and product management in communication technologies. First learnt to cooperate with installing enterprises as an architect and project manager.



How is your market developing at present?

Markets are developing very heterogeneously, each with a strong dynamic of its own. In every country group there are different competitors who challenge us with their strategies. We are very much confronted with local business cycles that are seasonal and fast-moving. From south to north, there is a striking increase in the demand for Cat. 6 and fiber optic solutions.

What are you doing to cultivate your market?

Our strategy is for each country to win select partners who, together with us, cultivate the local market at a high level of quality in a sustained way. For each region we want to have several representative office managers (ROMs) who are imbued with the R&M spirit and have the necessary drive. Personal contact makes for success potential and branding.

What do you find fascinating in this market?

The complexity, the variety of the combination of technology, market and economy. The fact that in a team we are challenged to come up with creative top performance in cultivating the market. The internationality and the variety of cultures. Communication and culture connect people, and we are the carrier that makes this happen.



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Werner Spiess (64),
Key Account Manager IBM,
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werner.spiess@rdm.ch

His market: IBM and cabling projects of the IBM group and its customers.

His experience: decades of commitment in developing key account customers. Intensive knowledge of sales, marketing and competitors.



How is your market developing at present?

IBM is presently one of our largest customers. We can look back on more than ten years of successful cooperation. The system IBM ACS type C, which is made by us, is very widespread. However, we have to look to the time beyond this system.

What are you doing to cultivate your market?

Maintaining intensive global contact with the partners, sites and hierarchical levels at IBM. This includes information exchange, visits, cultivation of personal and business relationships. Active personal communication is a fundamentally important strategy... in line with the adage «contact makes contract». Our long-term task is to convincingly represent the R&M product line Freenet at IBM.

What do you find fascinating in this market?

The three letters IBM are incredibly well known throughout the world. Our high-quality products and our complete product range have made us a preferred IBM partner.



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Kai Lederer (37),
Head of Sales International Components,
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kai.lederer@rdm.ch

His market: worldwide sale, to assemblers, of fiber optic components, E-2000™ and SC connectors.

His experience: several years of activity in OEM product management. Profound know-how in the area of fiber optic components. Establishment of a global relationship network to efficiently obtain dedicated information.



How is your market developing at present?

Thanks to the global recovery in the economy and a general trend for bringing fiber optic cabling closer and closer to the user, developments in the components segment have been extremely positive. The components business is running at ever increasing clock speed.

What are you doing to cultivate this market?

Careful monitoring of the very specific market of the E-2000™. I move in the global market of fiber optics and keep close tabs on the use of this connector. I visit exhibitions, conferences and of course potential assembler partners. In each country we want to service the local market at a high level of quality with just a few select partners. Technology and pricing have to be in perfect harmony to win projects or partners.

What do you find fascinating in this market?

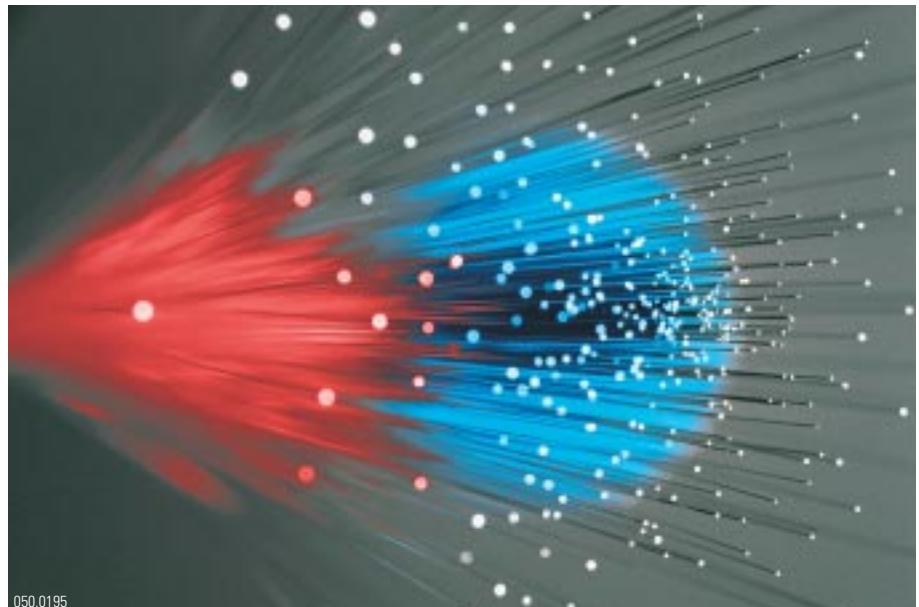
The E-2000™ connector is a gem among fiber optic connectors. It gives R&M a perfect starting position. We offer a product that is demanded by the market. The fast-moving component market requires flexibility, a presence in, and a good knowledge of, the market so that quick decisions can be made. In short, a business where decisions are made every day as to success or failure.

Fiber optics: quality is becoming ever more important

Roland Kohler
Director Business
Manager Carrier
roland.kohler@
rdm.ch



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Fiber optics – the future in communication

Large bandwidths and high transmission rates of high-performance optical networks place ever increasing demands on the quality of future applications. In particular, passive components are playing an increasingly significant role. For years, Reichle & De-Massari has been meeting these stringent requirements with its top quality products.

High-performance optical networks

Communication technology has become the lifeblood of today's society. The requirements for operational reliability of telecommunication paths are correspondingly exacting, particularly in relation to the high-performance optical networks that, at a national and international level, interconnect regions and countries. The fibre cables, which can be in the air, in the ground, or immersed in water have a conductive fiber core somewhat less than 10 µm in diameter, with a distance between nodes of between 80 and 100 km. However, because of the individual cable strands, splicing every 3 to 6 km is necessary. Submarine cables are an exception to this rule; they can be up to 300 km in length without the need for reinforcement.

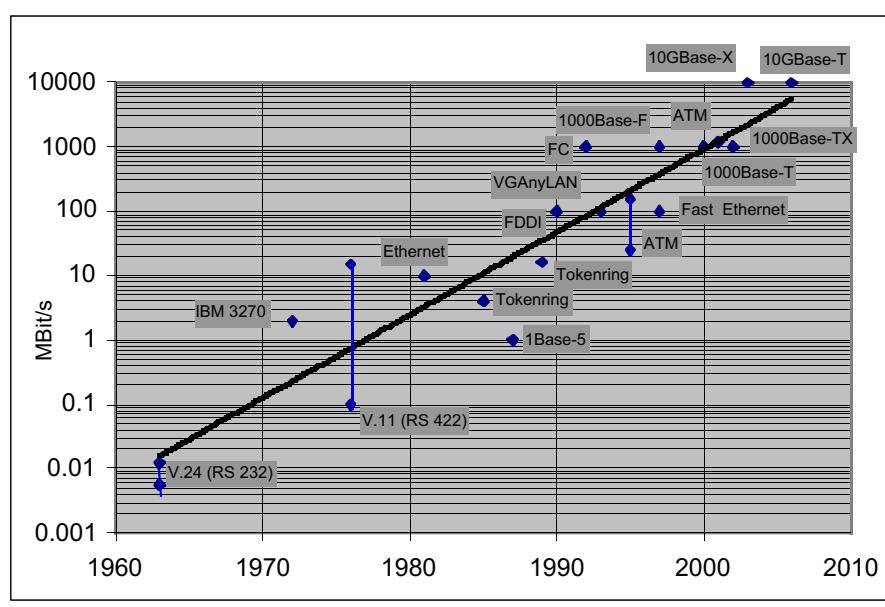
Reliability of optical networks

Being complex transmission systems, optical networks can have a multitude of deficiencies or faults whose effects can range from a drop in transmission quality to complete failure. There is an aggravating factor in that high signal speeds, ever faster bit rates and multiplication of channels by time division multiplexing (TDM) impose increasingly high demands on the passive transmission components. Consequently, questions about the reliability of optical networks are becoming increasingly topical:

- How reliable are optical networks?
- What steps can be taken to counteract possible physical failure?

- What operational parameters have to be observed?
- How can the service life of passive networks be influenced?

Telecommunication providers frequently state that network availability is 99.99%. This is an extremely demanding standard which, above all, has to be met by the passive components, since their selection has a decisive influence on the reliability of optical transmission networks. For example, the radii of fiber pigtails and patch cords have to be sufficiently generous to prevent premature ageing of the fibre core – caused by high data rates. In particular, the requirements of connections, adaptors and splices have become more stringent to ensure reliable uninterrupted operation of all possible transmission types. Equally important are the mechanical guidance and protection of all components used, so as to prevent mechanical damage being caused to operational plant by extraneous effects.



High-performance fiber optic networks have to meet ever-increasing demands concerning transmission performance and operational reliability. In particular, the quality of passive components plays an important role:

- high-quality fibers
- high-quality connections, adaptors and splices
- installation with adequate radii
- excellent mechanical protection



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E-2000™

Apart from the components, the fibers themselves can also contribute to degradation of the transmission quality. Above all, irreparable self-destruction effects of the optical waveguide (known as fiber fusion propagation, FFP) spring to mind. Finally, personnel protection issues (laser protection) as well as acceptance tests and maintenance routines have to be considered as potential causes of faults.

Consequences of fibers being in short supply

Due to the ever-increasing demand for higher-capacity transmission networks, fibers may be in short supply in only a few years time. This would then lead to a situation where the technology of wavelength multiplexing (coarse/dense wavelength division multiplexing, CWDM/DWDM) would have to be employed in steps, faster than hitherto assumed, in higher-order networks (access and metropolitan networks). However, migration to this type of multiplexing is associated with an increase in the optical energy being fed into the network. Consequently, the reliability of optical connections in layer 1 assumes still greater importance, both as far as operational and technological aspects are concerned – a great challenge to the entire cabling, components and accessories industry, including the installation personnel.

Performance and service life

Customers certainly accord top priority to network reliability and performance – factors that can be ensured and significantly improved through the use of high-quality products. No less important for economy is the service life of networks, with the service life in the same way directly

correlating to the quality of the products used. The better today's products meet the requirements, the better the service life of passive networks – investment protection which pays dividends. In this context a well-thought-out network design and thus the selection of a carrier and its owner should not be underestimated.

High-quality technology

For many years, Reichle & De-Massari has been developing and producing the high-quality products demanded by the market, thus meeting present and future requirements of networks and applications. With its

- «Radius 40» product range
- «Secure Pigtail Guiding» which is used in various products for mechanically securing pigtailed (see illustration 3 on the right), and:
- «Fiber Optic Management System»

Reichle & De-Massari has positioned itself right at the top of the fiber optic manufacturers. Furthermore, there are the E-2000™ and E-2000™ Compact connectors (see illustration 1 on the right) made under licence to Diamond SA as core components of capable transmission networks.

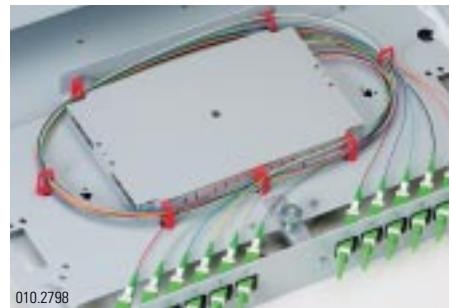
In future, high-performance fiber optic networks will have to meet stringent demands concerning transmission performance and network reliability. With high-quality technology, both science and industry have to provide the basis for meeting these requirements. By further developing and extending its product range, Reichle & De-Massari has taken account

High-quality plug connectors from R&M

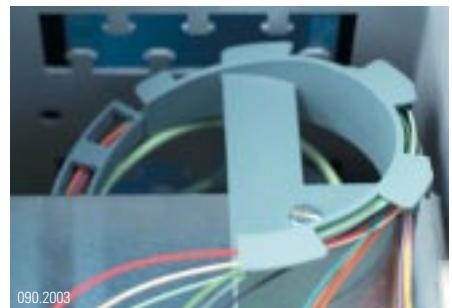


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E-2000™ Compact



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Splice tray R40 for high-bit-rate data transmission



090.2003
Secure pigtail guide for FiberCurb 2

of these circumstances and has positioned itself as a guarantor of high-quality fiber optic solutions, and as a consultant for providing the market with network solutions that safeguard customers' investments well into the future.

GET MORE @ R&M fiberoptics for the future.

E-2000™ and E-2000™ Compact manufactured under licence to Diamond SA, CHE-6612 Losone

R&M security system now for fiber optics too

Rolf Zollinger
Product Manager FO
rolf.zollinger@rdm.ch



More security in the network. At present there are few topics that are of greater importance. This also applies to sensitive high-performance networks using fiber optics. Where can maximum security be achieved at little expense? At the connector! R&M is therefore now introducing this tried and tested multistage security system for the fiber optic connector SC-RJ too.

Multistage security system for fiber optic connectors

The best security software is of little use if passive cabling is endangered by manipulation, error, incorrect handling or installation deficiencies. Problems of this type cause more network failures and data loss than do computer viruses. Such cases happen every day because in living enterprises the LAN, too, is alive.

R&M provides remedies with effective security solutions that are simple to implement. The multistage R&M security system can now also be used with fiber optic connections. The SC-RJ by R&M, the smallest SC duplex connector anywhere in the world, is thus the most secure of its type.

Small clips with a great effect

Unambiguous marking helps prevent mistaken transposition of connections. The connections in the patch panel and at the outlet have exactly the same colour code as the patch cables.

| Fiber type | Colour |
|-------------|------------|
| OM1 62.5 µm | Black* |
| OM2 50 µm | Orange* |
| OM3 50 µm | Turquoise* |
| 9 µm PC | Blue |
| 9 µm APC8° | Green |

*R&M standard

With the SC-RJ, colour coding is even possible in two colours, with one colour, for example, denoting the fiber type, and the other colour the application. The colour markers are plastic parts that can simply be clipped onto line cables and points of connection. The SC-RJ makes it



impossible to mistakenly transpose input/output or transmit/receive directions, and the connector cannot be plugged in rotated by 180°.

Highest level, highest protection: Plug Guard by R&M prevents disconnection. The sleeve can only be opened by authorised persons who have the appropriate special key. Practical Smarholes accommodate the coloured sleeves.

Precision for transmission security

Excellent transmission security is a further plus. Precise ceramic sleeves (for single mode) or PhBr sleeves (for multimode) guide the fibers in the SC-RJ adaptor. This ensures extremely low attenuation values and optimum signal transmission even with 10 Gigabit Ethernet.

Small form factor: compact, modular, economical

The small form factor (SFF) makes the SC-RJ from R&M not only extremely compact but also particularly modular and economical. The size of the fiber optic connector is such that it fits into the RJ45 cutout. It can be plugged, unplugged or secured just as easily as can RJ45 connectors. The effect: glass fiber can be installed or retrofitted in the same modular way as can any copper connection – in the patch panel or in the workplace outlet. This makes it possible to quickly put in place structured cabling with two media on the same platforms.

Incidentally, the name SC-RJ provides information on its origin. SC is the most economical of the widespread optical precision connectors. It can easily be plugged in and out (push-pull) and as the SC

duplex it can combine optical inputs and outputs. RJ is the standard family of connectors for telecommunication and LAN.

High performance and a safe investment in the future – SC-RJ data

SC-RJ meets the requirements of ISO/IEC 11801 and TIA/EIA 568. As a fiber optic connector it is standardised according to EN 50377-6-1 for multimode fibers (type A1a and A1b) and EN 50377-6-2 for singlemode fibers (type B1.1). It corresponds to cabling standard EN 50173-1 (2002) (enterprise cabling) and to draft standard EN 50173-3 (industrial cabling). This provides planners, consultants and end customers with the security of investing in fiber optic cabling that is a safe investment in the future.

get more

R&M security system with SC-RJ

More network security

- Mechanical and colour coding prevents incorrect connections
- Locking mechanism for authorised connection or disconnection

More operational safety

- Security system for patch panels and outlets
- IP protection against damaging environmental influences

More modularity

- Fits in copper global patch panels and 16-port patch panels
- Fits in all patch panels and outlets with RJ45 dimensions
- Snap-in or single-channel module
- SC-Simplex compatible

R&M

6x1 Port – a box with a future

Yingbo Seiler
Assistant Product
Manager Private
Networks
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rdm.ch



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Greater bandwidths, more connections, more flexible in use – these are the requirements of modern building cabling. R&M recognised these market trends early and together with its customers developed a wide range of RJ45 outlets. The latest star is the compact box 6x1 Port which provides ample space and can be equipped with various components.

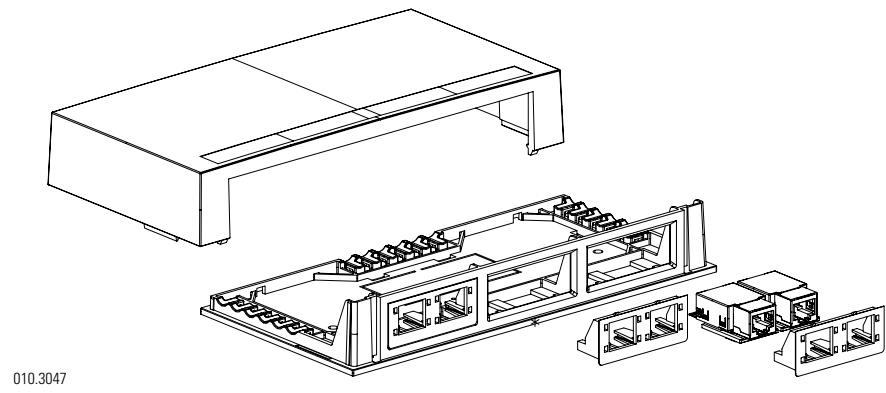
A chain is only as strong as its weakest link, and an installation is only as capable as its individual elements. The outlet assumes an important role: as an interface to the «outside world» it has to meet a multitude of requirements of planners, installers and end customers – a wide range to meet the manifold installation requirements; high technical quality to handle increasing bandwidths; clever modularity to keep costs down and allow changes; mechanical stability and reliable handling to withstand the rigours of everyday use; and also a pleasing design to meet customers' aesthetic requirements.

The system solution

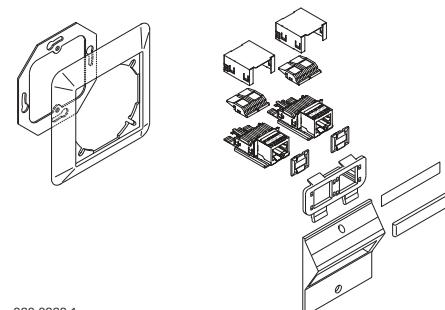
With its outlet range, R&M meets these requirements and offers state-of-the-art connection technology for any application and use:

- Surface mounting, flush mounting and duct-mounted outlets with numerous RJ45 modules, security functions, splash-guard functions and accessories
- New adaptor no. 1 for more flexibility
- Outlets of the «Splash Line» series according to IP54 for excellent protection against dust and humidity
- «Industrial» outlet according to industry standard IP67 for Cat. 5e and Cat. 6.

In particular, close cooperation with various local circuit program manufacturers makes it possible to quickly integrate new trends in the range and offer them to customers. R&M therefore also has country-specific outlets and solutions. With Smart-holes and integrated labelling, the outlets



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Modular: the boxes impress by a multitude of variants for surface mounting, flush mounting and channel installation, exchangeable RJ45 modules, security and splash guard functions as well as accessories.

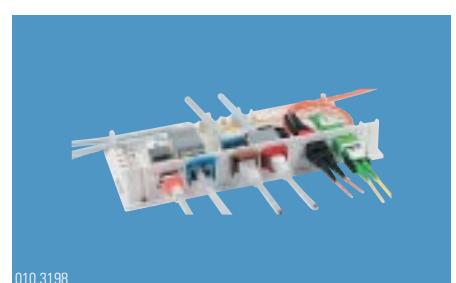
6x1 Port compact box

The 6x1 Port compact box is a stand-alone box that can accommodate six RJ45 connections. It features:

- Bending radii up to 40 mm
- Installation of cables up to Cat. 7
- Installation of components for FO, RCC45® and PK94 applications
- Unattached positioning or wall installation
- Compatibility with the R&M security and environmental system.



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are prepared for use with the R&M security and environmental system.

The 6x1 Port compact box

The new compact box 6x1 Port is the latest addition and an ideal supplement to R&M's comprehensive range of RJ45 outlets. The 6x1 Port is larger, more versatile and more capable, and is thus used wherever several connections have to be simply and easily accessible: on or under the desk, on the wall, in conjunction with a duct, or on the consolidation point.

As a successful supplier of generic cabling systems in the international arena, R&M is well aware of the significance both of universal systems and of regional and customer-oriented product solutions. The compact box 6x1 Port, which was developed as a result of continuous market observation, and in close cooperation with R&M customers, is one example of this.

R&M Netplanner 2

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Manager
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010.3186

With its latest version of Netplanner, R&M is providing its customers and partners with a valuable tool. Netplanner gives them more flexibility, greater time savings and greater efficiency when planning and installing networks.

For quite some years, the market for cabling technology has been characterised by strong price competition. On the one hand, end customers seem to profit from this development. On the other hand, committees for standardisation favour more quality-oriented access, as does good sense. This applies not only to the selection of components, but also to planning, installation and the maintenance of networks. How does R&M react to the challenge that arises from the need for high quality in combination with competitive pricing?

Greater efficiency

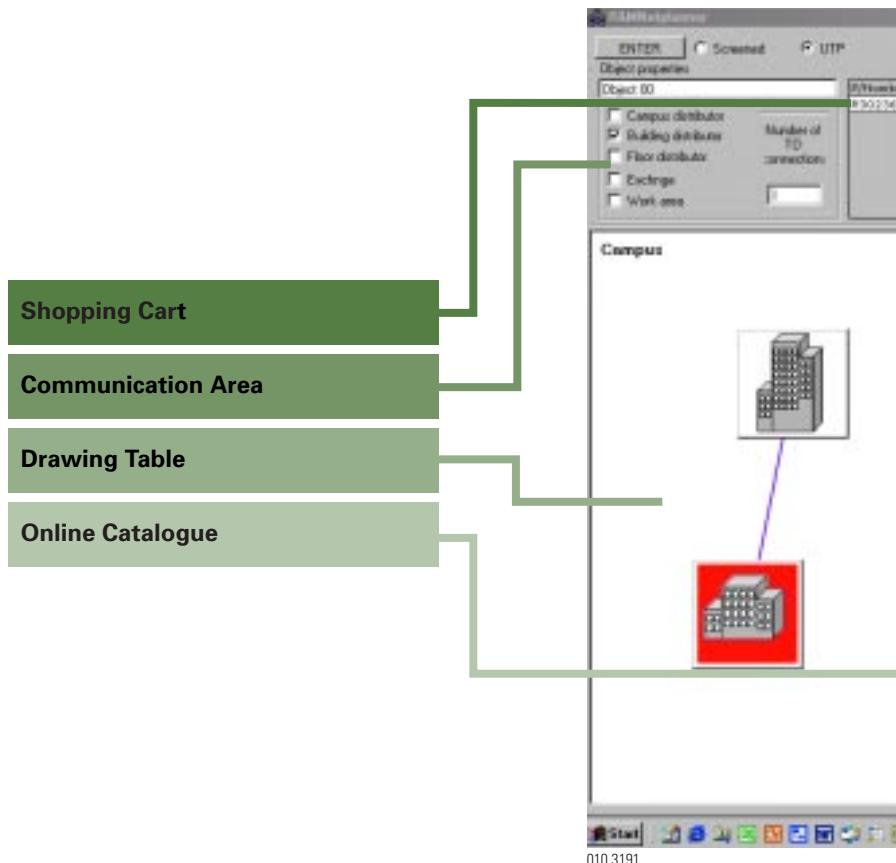
R&M tackles this problem by making the planning and installation phase more efficient and faster. The administrative steps during the tendering process, the planning phase and the preparation of warranty packages can be greatly reduced with the use of the second edition of R&M Netplanner. Furthermore, planners and installers are supported with an easy cable management database. The results obtained with the program correspond to the official standards, can be exported to any format and are compatible with any commonly-used software for cable management. The overall cost of a project is thus reduced in that the individual work steps are made more efficient so that the time needed to complete the task is reduced.

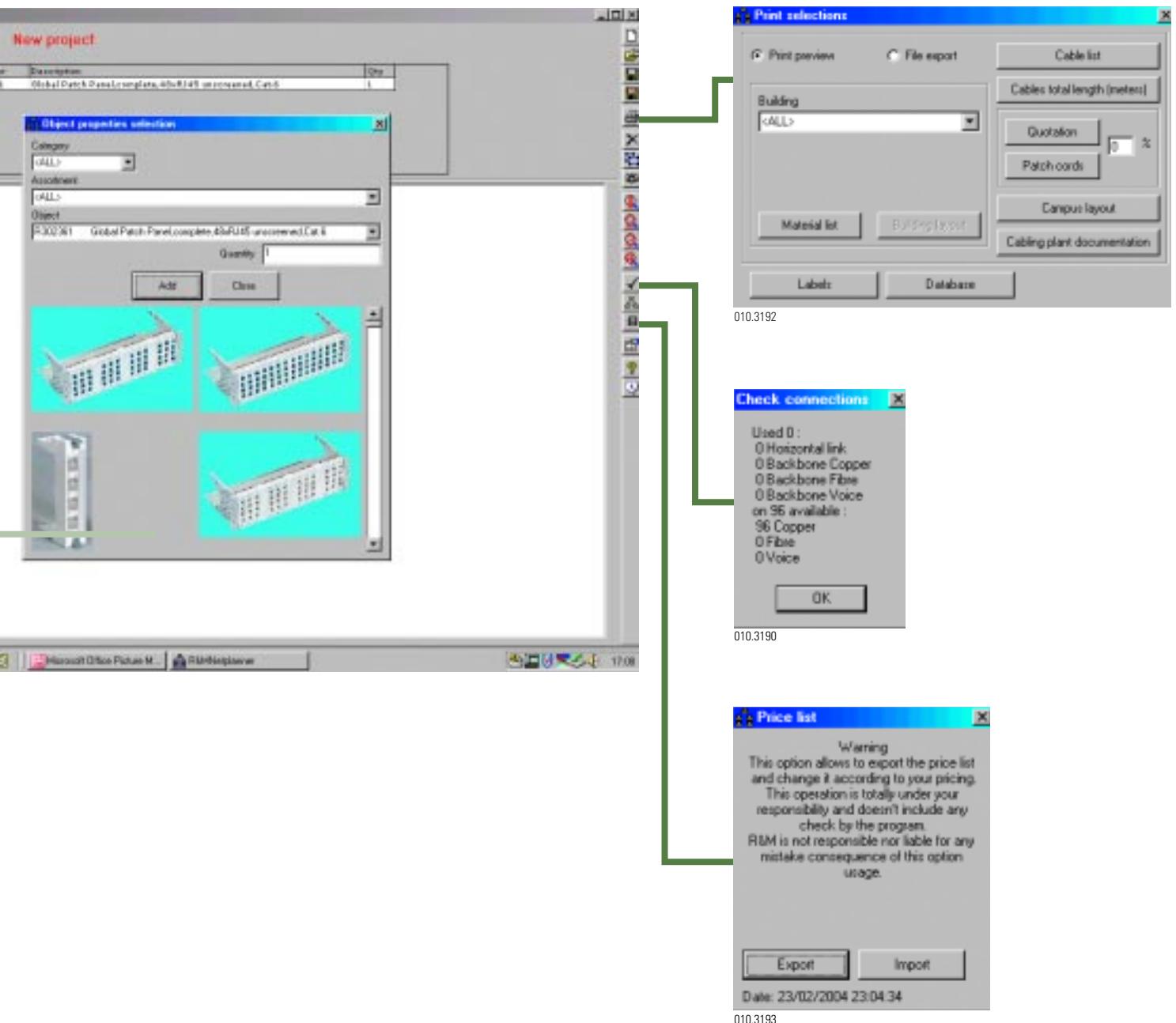
More flexibility

Up to now, Netplanner has predominantly been facilitating materials allocation and pricing. The current version provides a number of additional functions. While the previous version of the program was available in various languages, it was not able to take into account differences in the price lists (currency and country). Netplanner 2 offers users the necessary flexibility for individual settings. For example, when the program is installed the price list does not yet contain any entries. The user can export the price list in order to configure it according to individual requirements. As an alternative, direct import of an Excel sheet is possible which contains part numbers (column «A») and prices (column «B»). Netplanner 2 then automatically prepares a new price list.

Closer proximity to the customer

Like all other products in the R&M range, Netplanner meets the requirements for flexibility and modularity, the latter being among the mainstays of the R&M philosophy. Early detection of customer wishes and the fastest possible reaction to them is a further fundamental premise of R&M. Thus, further development of Netplanner will largely depend on the way the requirements of users and customers develop. Clearly, R&M takes its trademark promise «GET MORE @ R&M» literally and invites its clients to do likewise.



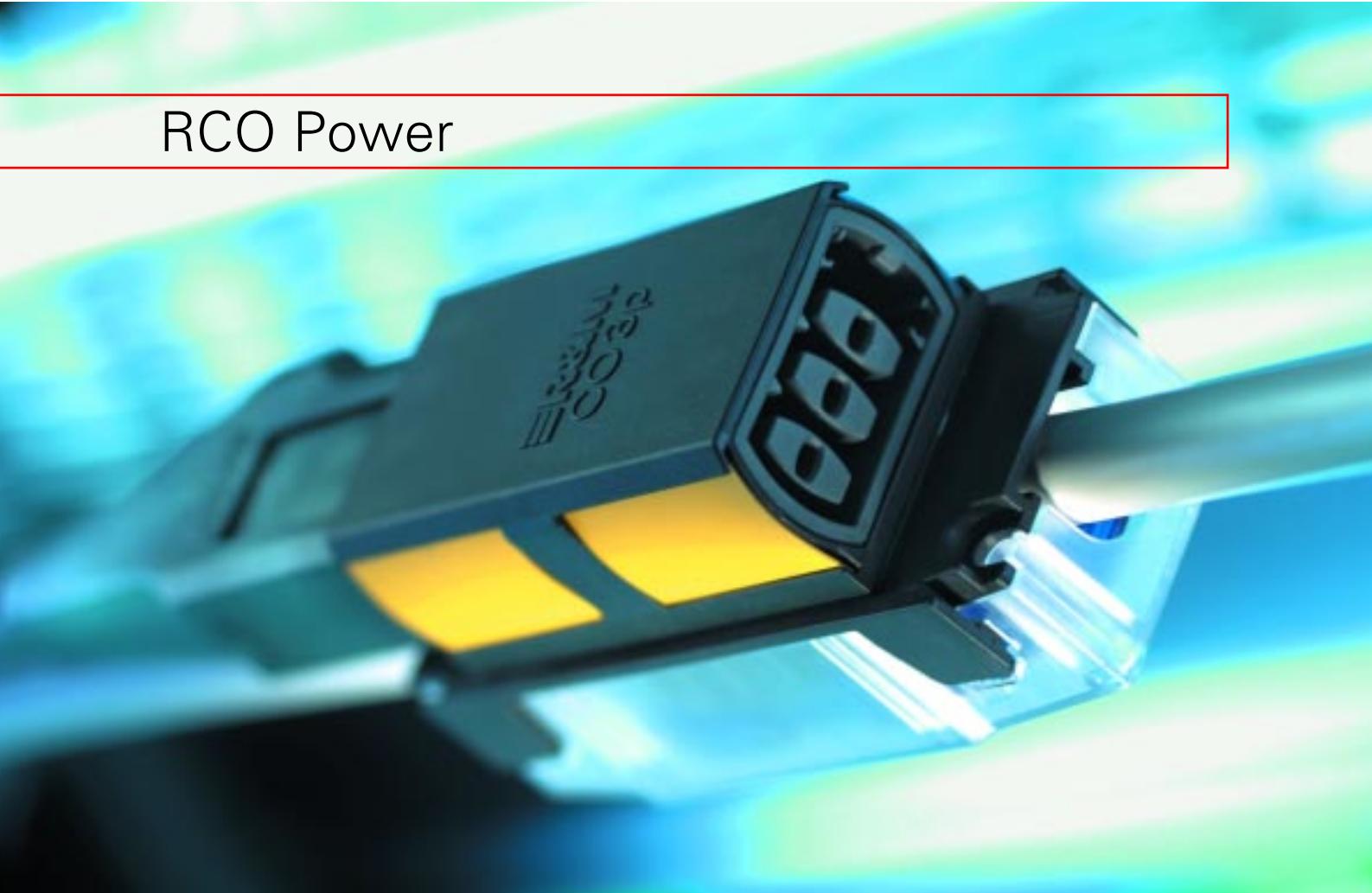


Overview of the advantages of Netplanner 2

- *Online Help* – Explanations relating to the program and tips on current cabling standards facilitate the use of Netplanner 2.
- Price list can be configured individually.
- *Simplified component selection* – The selection of components can take place by selecting the part number (as in Netplanner 1) or by simply clicking on the images shown in the online catalogue.
- *Better presentation* – Additional enlargement options make it possible to show the horizontal connections more precisely.
- *Control function* – The program checks all the components for missing connections or excessive capacities.
- *Options for further processing* – The results can be printed or exported in an application-specific format, for example the entire information can be stored for further processing at a later stage.
- *Easier to understand* – Netplanner 2 features detailed functional descriptions and user prompts. The program also includes a model project and harmonised administration standard (ISO/TIA).
- *Free availability* – Netplanner 2 comes with a user licence which is free of charge.

Netplanner 2 can be downloaded from our Internet-Site:
<http://www.rdm.com/381/629/630/664/676/680.asp>

RCO Power



THE BEST POWER SOURCE SINCE THE INVENTION OF THE SOCKET

With RCO Power you can attach powered devices or socket boxes at any point on a power cable – in seconds. RCO Power is ready and willing to offer you more, in every respect:

- Convenience in installation: Can be wired to conventional round cables
- Contact reliability: Tool-free IDC* contact
- Efficiency: Two ports per adapter
- Reliability: Integral plug locking
- Clarity: Mechanical and visual coding

RCO Power – yet another forward-looking innovation from R&M, the technological leader. There are plenty of ideas – R&M makes them reality.

*Insulation Displacement Contact



Simple, fast wiring anywhere:
a bus-like supply of energy,
without costly distributors.

Get More @ R&M

R&M
Convincing cabling solutions

Reichle & De-Massari AG
Binzstrasse 31, CHE-8622 Wetzikon
Telephone +41 (0)44 933 81 11
Telefax +41 (0)44 930 49 41

www.rdm.com



La Poste equips financial centres with R&M components

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rdm.com



La Poste France sees its future in the rigorous pursuit of customer orientation and quality improvement. Accordingly, La Poste has embarked on a course of modernisation of its financial services by investing heavily in information technology. The first financial centres (CRSFs) are now equipped with components from R&M.

Multi-functional enterprise group

As a respected public services provider with a network close to its customers, La Poste France is a particularly active enterprise in a competitive market. La Poste specialises in three segments: forwarding letters, providing financial services, and forwarding parcels/express mail.

Financial services represent a strong economic pillar. Uncompromisingly dedicated to its 28 million customers for whom it administers 45 million accounts, La Poste has for many years developed a flexible strategy for its customers with its network of 17 000 branches and 20 regional financial services centres. Its customers communicate with the financial centres by letter, telephone, Minitel and more and more frequently also via the internet.

Exceptional importance of the technical infrastructure

Because of the sheer size of such an organisation, the selection of technical equipment is exceptionally important. In the case of La Poste the final selection is the result of a long and intensive evaluation process.

An internal team is dedicated to this task. DESM (Direction du Support et de la Maintenance) has to officially release every cabling component before such a component can be installed.

The financial centres of La Poste

Since the end of the 19th century, La Poste has also been active in banking and insurance. La Poste has developed a new model of individual services for today's financial services centres. The enterprise



La Poste is upgrading its financial centres with Cat. 6 from R&M

provides access to the banking system with products and services which reflect the essential requirements of its customers.

The extraordinarily large overall project of renewing the financial centres as far as information technology and cabling is concerned started in mid 2003 with the first stage of the ARLES project. By the end of 2005 more than 18 000 individual workplaces and 800 servers will have been networked.

The selection of network components turned out in favour of R&M Cat. 6 products. They were chosen due to their technical validation according to specific requirements and due to their proven track record in other large segments of the postal service.

Reliability, security, product quality and adaptability of the solutions from R&M, were all convincing factors in the final decision. Cat. 6 modules achieve very good performance for the many different existing building types.

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La Poste France

@

R&M

Quality cabling at La Poste

For modernising the information technology in its 20 financial services centres, La Poste France selected the product range from the Enterprise Cabling program of R&M. Among other components, the following were installed:

- Shielded Cat. 6 / RJ45 connection modules
- Global patch panels and 24-port patch panels
- 50-port voice patch panels, Cat. 3
- Cat. 6 patch cables
- Multipair voice cables Cat. 3

Proving ourselves in the Swisscom Mobile Center

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Changing tyres at full speed without anybody noticing it: this would be one way of describing the challenge in the Swisscom Mobile Center Chur. During ongoing 24-hour operations, the entire cabling infrastructure of this call centre in eastern Switzerland was to be exchanged. Thanks to tried and tested cooperation between the partners Cablex and R&M, Swisscom Mobile stayed in the race without any interruptions.

Customer service means full-time service. No interruptions. Operations must not be disturbed under any circumstances. Customers and employees must practically not notice anything of the conversion. During the construction phase, the old network has to continue to function around the clock. These were some of the uncompromising requirements Thomas Gygax spelt out to planners in autumn 2003. The Network Manager of Swisscom Mobile AG had a clear objective in



from left: Luzius Pargätsi, Cablex AG, Franco Karlen, Swisscom Mobile AG, Thomas Gygax, Swisscom Mobile AG and Dieter Kunz, R&M

mind. By the middle of 2004, the Chur call centre of Swisscom Mobile AG was to have a new infrastructure for its telephony and data network in order to continue providing customer service at even higher speed.

The reason for the strict specifications of this task is that in the mobile telephony business, smooth and uninterrupted full-time customer service is decisive in effectively meeting the competition. Consequently, quality and reliability were accorded absolute priority in this project. Franco Karlen, Account Manager at Cablex AG, accepted this challenge, along with Luzius Pargätsi, Project Manager, and his motivated team, and together with R&M as the system supplier of passive cabling.

Step by step to the new network

The project was tackled with detailed planning and exact timing. In the words of Thomas Gygax: «In the Swisscom Mobile-building in Chur we had ideal conditions, for example air conditioned rooms of adequate dimensions for the main distributor frame and the floor distributors. It was like starting on a green-field project.»

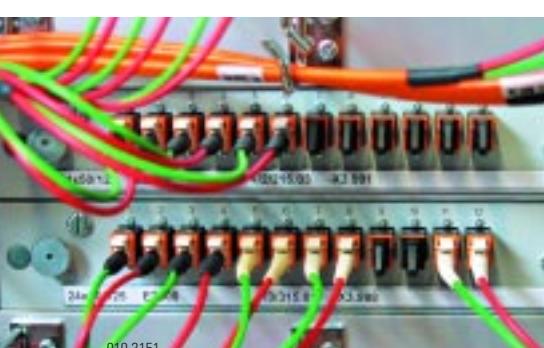
Phase 1 included the installation of all passive components for primary, secondary and tertiary cabling, including a fiber optic backbone. In phase 2 the active components followed, and in phase 3 the power and communication cabling to individual workplaces. Each individual step was precisely coordinated until finally the decisive moment of switching the clients was only a matter of a few manipulations.

Removal of the old infrastructure completed this successful project.

«Just in time and round the clock»

The fact that R&M and the Cablex team were able to work hand in hand – not unlike a Formula 1 racing team – was decisive to smooth progress. R&M supplied on a just-in-time basis whatever was needed on the construction site in a race against time. If something really had to «fly», Customer Service Manager Dieter Kunz would sometimes bring the parts to Chur in person.

The Cablex team worked many a night shift in order to cause as little interference as possible to the ongoing operations of the call centre. Thomas Gygax, who was on site during the entire project phase, confirms that «the Cablex people have been very flexible and customer-oriented»;



010.3151



010.3162

get more
Swisscom Mobile, Chur

- Product quality
- Solutions from a single source
- Support and flexibility
- Security

@ **R&M**



010.3168

at the same time, Franco Karlen of Calex stresses that «cooperation with the employees of Swisscom Mobile in Chur was very agreeable indeed».

In the words of Franco Karlen: «For Swisscom Mobile and for us it was the best solution to collaborate with the tried and proven partner R&M. This saves time and is easy on the nerves.» For the customer, Swisscom Mobile, it was also very important to obtain from a single source a cabling solution that leads from the backbone to the connection on the desktop and includes optimum support.

Mobile telephony call centre for eastern Switzerland

Anyone in eastern Switzerland who has questions relating to the mobile telephony products and services of Swisscom is transferred to the Call Center Chur. Swisscom employees provide help on all issues relating to mobile telephony and handle customer orders 24 hours a day, 7 days a week. In peak times, up to 70 employees are on duty concurrently, with more than 50 per cent of their workload being handled in the evening and at night.

A capable and efficient infrastructure is an absolute must for a smooth operation. The infrastructure was completely renewed in the first half of 2004. Telephony and LAN (backbone, UGV) are separate from each other and interconnected via computer telephone integration (CTI).

In the call centre and in the training, administration and technical facilities, more than 80 kilometres of cabling were installed, 1,800 ports were networked, 440 EDP and 420 telephony clients were connected.

In addition, Calex installed the following: Fiber optic backbone and fiber racks from R&M, VS Modular from R&M for the PBX, Extended Office Cabling (EOC) components and other lockable floor outlets with 2 power rails (with and without USV).

A project with consequences

Smooth project management is not without consequences. Based on the additional experience gained from the Call Center Chur, Dieter Kunz, together with Swisscom Mobile, is now preparing installation guidelines. R&M has extensive experience in this field, and various key account customers are already benefiting from it. Network Manager Thomas Gygax is rigorous in this respect too: «I want to give clear guidelines to our suppliers – and then things must run like clockwork. I don't have the time to follow it all up later.»

Swisscom Mobile will continue to collaborate with the two partners Calex and R&M. Security – including physical security – is very important to Thomas Gygax

Swisscom Mobile – number 1 in Swiss mobile telephony

Swisscom Mobile AG is number 1 in the Swiss mobile segment with 3.7 million customers and a market share of 65 per cent. The enterprise operates as an autonomous unit in the Swisscom Group, which in turn holds 75 per cent of the share capital. Swisscom Mobile AG operates a GSM network which covers 99.7 per cent of the country's area and supports technologies such as HSCSD and GPRS. Moreover, Swisscom Mobile has installed wireless LAN access at 600 highly frequented locations.

The head office of Swisscom Mobile is located in Berne. In line with a regionalisation strategy, there are four service centres in Switzerland. Apart from the Chur location for eastern Switzerland, there are service centres in Bellinzona (south), Lausanne (west), and Olten (central and northwest). All up, the service centres have approximately 600 employees and accommodate hotlines and help desks for consumers and corporate customers, as well as second-level support, controlling and technical departments.

since the Customer Care section for the eastern region is accommodated in the Call Center Chur. The specifications demand that it should not be possible to tap into unoccupied outlets without security provisions. For this reason the R&M security system will be installed in the next phase.

All the outlets and components will be colour-coded. The aim is to provide a clear overview as it facilitates service work and guards against mistaken transposition of connections. Products from the three-stage R&M security system will be integrated in the existing network. The installation of further modules from the extended office cabling program of R&M is planned for network connections at individual workplaces. In the words of Thomas Gygax: «As a general principle, I am prepared to use new products also in existing networks, provided these products turn out to be the very best.»

In addition, all the clients will be recorded in detail in a database. «Recording is the first step to good care and maintenance of this data, a task which is absolutely essential, otherwise the costly investment will not have paid off.»

Calex AG – committed throughout Switzerland in the service of telecommunication

Calex AG is among the leading Swiss specialists for network construction and maintenance in the areas of telecommunication and data traffic. This independent enterprise was established in 2001 from the network construction division of Swisscom, and is now a subsidiary of Swisscom Fixnet. Country-wide, Calex employs 600 persons; in many locations it has its own branches. Each year it handles approximately 50 000 construction orders amounting to approximately 80 million CHF. Calex is a general contractor for the planning, construction, repair and operation of networks.

Digital safe with cables from R&M

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These days more than good safes are needed for secure investment of money and for accurate account keeping. Computer centres have become the most important guardians of treasure, they need to be absolutely safe. When fitting out their data networks and computer centres, leading Swiss banks rely on cabling technology from R&M. A current example: the Raiffeisen Group.

A computer centre for all customers and bank branches in Switzerland

More than 2.5 million customers entrust their money to the Swiss Raiffeisen banks. In what is Switzerland's most densely-woven banking network, about 1200 Raiffeisen Bank branches provide personal service in close proximity to their customers. Each branch, each computer and each automatic teller machine of the organisation is networked with the computer centre of Raiffeisen Informatik AG. Work in the computer centre is characterised by a data volume that is growing every day, by ever-increasing security requirements, and by an endeavour to continually improve both the technology and the organisation.



Ever increasing requirements

For the above reasons, at the beginning of 2004, the operator, Raiffeisen Informatik AG, had to act quickly.

The brief was to expand, modernise and recable the computer centre of Raiffeisen Informatik AG within the existing premises and infrastructures in the shortest possible time. Five concepts were submitted and were discussed in detail with Büchler + Hiestand.

A star-shaped copper and fiber optic cabling system with a central distributor room for each building unit was found to be the most economical and effective concept.

The Raiffeisen Group is growing – and so is its infrastructure. The photo shows a new building under construction, with cabling from R&M.

In the words of telematics specialist Raymond Riedl of Raiffeisen Informatik AG: «We opted for a solution that is going to cover our requirements for some years into the future, too.»

Under enormous time pressure, the installation enterprise Huber + Monsch AG of St. Gall took on the project in March 2004. Work had to start a mere four days after the contract had been awarded by the management of the Swiss Association of Raiffeisen Banks. Installation Manager Marcel Baumgartner remembers the extreme challenge well: «For the installation of the first stage we had only three weeks available before the raised



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Raiffeisenbanken

- Readiness to deliver
- Reaction speed
- Convincing product quality
- Security solutions
- Proven partnership with a qualified installation enterprise



floor was put in place.» With maximum commitment, meticulous delivery deadlines and quite a few night shifts, the project was finished on time.

Convincing presentation

To achieve the optimal solution as far as security and handling were concerned, Martin Hagmann constructed a sample cabinet with carefully attuned copper and fiber optic materials from R&M. This important step made it possible to present and test the solution in a «one-to-one» arrangement.

Thus, the responsible managers at Raiffeisen Informatik AG were able to form a

clear picture of the planned installation. In their decision, the delivery-time and quality guarantees of R&M and Huber + Monsch, the readiness to deliver, and their years of proven cooperation all played an important part.

Back in August 2000, the Raiffeisen Group started to convert the connector systems and cabling of its data networks to original R&M products. It already uses the R&M Freenet program. The quality and performance of R&M products convinced the decision makers at Raiffeisen Informatik AG. Consequently, since June 2003, R&M has become the first choice also for fiber optic cabling, with Vision and Varioline systems now being used.

The Raiffeisen Group

The 450 or so Raiffeisen Bank branches in Switzerland – which operate under the umbrella of the Swiss Association of Raiffeisen Banks (SVRB) – are represented in approximately 1200 locations and thus constitute Switzerland's most densely-woven banking network. One Swiss in four has an account with a Raiffeisen Bank. With a balance sheet total of approximately 102.1 billion CHF, the organisation ranks third among the Swiss banking groups.

Raiffeisen Informatik AG

Raiffeisen Informatik AG is an independent subsidiary of the Swiss Association of Raiffeisen Banks (SVRB) with its main office in Dietikon and branch offices in St. Gall, Rubigen, Rivera, Renens and Adligenswil. In St. Gall, Raiffeisen Informatik AG with 150 employees plans and operates networking of the Raiffeisen banks from its own computer centre to the more than 1300 router locations. In Dietikon and in other locations 250 specialists provide support for the branches

and the development and integration of banking software.

Raiffeisen Informatik AG provides comprehensive IT solutions to the Swiss Raiffeisen Group. With its technological know-how, RIAG makes a substantial contribution to the constant flow of innovation and cost optimisation within the banking group and ensures the maintenance and renewal of the IT landscape within this banking cooperative.

Flexible cabling for high quality jams

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How can one still further improve exquisite jam from northern Germany? With true Swiss quality! At Göbber, the renowned jam manufacturer from Eystrup, data, voice and signal communication now flows through a top quality cabling infrastructure made in Switzerland. The systems solutions provider Wahl + Co. has installed R&M Freenet.



Göbber production plant: uncompromising commitment to top quality



Göbber has long recognised that the future lies in networked operation. With Wahl + Co. it selected a service provider that was able to provide from one source the entire modern infrastructure for efficient and fast communication, safe data traffic and reliable monitoring and control. This modernisation is based on a long-term well-thought-out investment concept.

While operations continued, a structured Cat. 6 cabling system with fiber optic connections and components from R&M was

put in place. This system forms the basis of a fully switched network with Gigabit backbone, Fast Ethernet and an area-covering W-LAN for production and storage areas.

Production processes, quality assurance, administration, video surveillance and security installations are now perfectly networked. Ultimately, this will please the tastebuds of breakfast gourmets, because the staff at Göbber can now more than ever concentrate on producing still better jams.

Partnership with R&M

The installation at Göbber is one of many examples of successful cooperation between Wahl + Co. and R&M. A clear and mutual commitment which includes extensive guarantees, marketing services, support and know-how transfer forms the basis of this cooperation.

As a supplier of network components, R&M internationally sets new benchmarks

of reliability, quality and investment security for future applications in structured cabling systems as well as in office and industrial cabling. These factors are important to the systems solutions provider Wahl + Co.; they provided the employees Günter Baier and Andre Worms with the support and backing for the successful project at Göbber.

Modular cabling and true Cat. 6 performance

The Freenet range, which is in use at Göbber, is based on the model example for total solutions in modular cabling systems. The installation was flexibly adapted to take account of the special circumstances of the customer's project.

There is no limit to upward mobility. In other words, the Freenet system makes it easy at any time in the future to install wide band, right up to the use of fiber optic connections to individual workplaces.

The partner: Wahl + Co.

The installation enterprise Wahl + Co., established in 1948, has transformed itself into an outstanding system house for complete solutions in the areas of technology relating to buildings, information, heavy current and security, as well as in telecommunications, IT security and IT services. Wahl + Co. has almost 500 employees in seven locations in Germany. Its product range includes conceptualisation, planning and design, implementation, and customer service. Wahl + Co. is a certified R&M partner.

The customer: Göbber

In 1888, the year of three emperors, Friedrich Göbber founded a trading company in Eystrup on the River Weser. On a very small scale, jams and syrups were produced from the fruit harvested in surrounding gardens. In the second generation, the company became a leading enterprise in this sector. It succeeded in expanding its position as a supplier to the foodstuffs industry and to the retail and wholesale trades. Göbber's jam production is characterised by uncompromising quality which meets several international standards.

get more
Wahl + Co.

- Flexible cabling system
- Safe customer investment in the future
- Extensive guarantees
- Support and know-how for the installation service provider.



Greek LAN to delight the taste buds



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E.J. Papadopoulos SA



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left to right: Evangelos Kavros, System Administrator; Ioannis Nitsos, MIS Manager; Ioanna Papadopoulou, President of the Board (E.J. Papadopoulos SA); Dimitris Filippou, Business Development Manager (Netplex Ltd.)

The Greek foodstuffs producer E. J. Papadopoulos S.A. is known for its exquisite range of biscuits and cakes. As far as its network is concerned, the enterprise acquired a taste for R&M solutions.

The company E. J. Papadopoulos S.A. is one of Greece's leading manufacturers of biscuits and foodstuffs. In order to be well equipped to meet the challenges of the future, the company decided to upgrade its network cabling to state of the art. This extensive upgrade, carried out by the certified R&M partner Netplex Ltd., covered three locations of the company, namely Thessaloniki, Volos and Enofytia. In these branches, the office buildings and the production facilities were equipped with a new and highly capable infrastructure.

Into the future with 10 Gigabit

A 12-fiber optical waveguide and a 25-pair multipair cable form the backbone for data and voice transmission in each of these locations. From the central distributors, the office buildings as well as the production facilities and warehouses are supplied via the respective network nodes. In the backbone, the available bandwidth is up to 10 Gigabit Ethernet; on the horizontal plane it is up to 1 Gigabit Ethernet via a Cat. 5e cabling system.

Network E. J. Papadopoulos – facts and figures:

Customer: E. J. Papadopoulos S.A.
Project manager: certified R&M partner Netplex Ltd.

- Structured cabling systems in administrative buildings and production facilities
- 10 Gigabit Ethernet backbone, FO and copper
- 1 Gigabit Ethernet Cat. 5e cabling
- Protection against dust and humidity up to IP54 with R&M Splash Line

Dust-free connection to the network

The network connection of the production facilities posed a particular challenge. A quite considerable dust load and high atmospheric humidity created particularly unfavourable conditions. RJ45 connection modules are especially sensitive in this regard. If fine dust and/or humidity is allowed to enter over time, this will result in expensive network failures. With Splash Line, R&M has an effective solution for such environments, which are encountered in many industrial plants. With this innovation in network technology, RJ45 connections can be protected against dust and water up to IP54.

Kyriakos Kostaridakis, Technical Director of Netplex, is enthusiastic about the advantages he could offer his customer E. J. Papadopoulos: «With its great relevance to practical applications and its flexibility, the Splash Line concept is a further milestone in modular system solutions from R&M.»

Comprehensive R&M solution

Not only in the production facilities, but also in the entire installed cabling solution, Netplex exclusively used R&M products. «We know that with R&M we can depend on state-of-the-art technology that supports leading-edge systems. We also appreciate the excellent scalability

and interoperability, both in the backbone and on the horizontal plane,» Kyriakos Kostaridakis explained. The R&M product range makes it possible for R&M partners to successfully implement common industrial protocols such as P-NET, Profibus, RS-485 and new technologies such as industrial Ethernet.

get more
E.J. Papadopoulos S.A.

- Extensive product range, also for industrial environments
- Professional service from a certified installation and planning enterprise
- Best product availability and best support in Greece
- Excellent product quality, security and reliability
- Long-term warranties from R&M
- Favourable price/performance ratio
- Excellent investment security



A superlative project

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The handover ceremony of the Marie-Elisabeth-Lüders-Haus of the Bundestag, the lower house of the German parliament, in Berlin, marked the completion of a large project. Over four years, Reichle & De-Massari had the opportunity to prove itself as a stable and reliable partner to the companies involved in this project, and to the customer, the Federal Republic of Germany. The complexity of the communications equipment installed in and between the parliament buildings impressively demonstrates the great technical expertise of R&M.

When, on 20 June 1991, the German Bundestag decided once again to sit in the German capital Berlin, this was at the same time the green light for a gigantic telecommunications project: new and modern workplaces had to be created for more than 4 000 employees; parliament buildings with a total of more than 5 700 rooms had to be cabled; and approximately 60 000 copper and fiber optic ports had to be installed.

The project involved not only the construction of new buildings but also the fitting out of existing buildings with a higher-order uniform data communication platform that would allow the German Bundestag to reliably communicate above the individual building level. To this effect, a dedicated network of fiber optic cables and bundled copper cables was constructed which interconnects all the buildings of the Bundestag in Berlin.



Marie-Elisabeth-Lüders-Haus, photo: German Bundestag / studio kohlmeier

Furthermore, the buildings in Berlin are connected to the Berlin-Bonn information network so that voice and data communication can, for example, also take place with ministries and administrative offices of other constitutional bodies.

R&M with a technological lead

In order to obtain a uniform cabling infrastructure in the new buildings, the customer, the federal government's construction contracting authority «Bundesbausellschaft Berlin mbH», issued higher-level specifications for all Bundestag buildings. High-grade fiber optic and copper conductors are an important feature of the telecommunication and data communication system. Specifications such as, for example, the 250 MHz capability of copper cabling had already been determined in the mid-nineties; they were a brave anticipation of the standards to be expected, which were only realised in 2003 by incorporation into EN 50173-1. R&M was convincing with its technological lead by offering a safe investment for the future beyond the required Cat. 5e. This factor was significant in the decision

to use R&M systems throughout. The same also applied to fiber optic connection technology from R&M based on the E2000™ connector for single and multi-mode, and to basing telecommunication distribution on the plug-type patching distributor system. The flexibility of switchovers, as required by parliament, especially following a vote, will prove of great advantage to the administration, which is then expected to handle such tasks in a very short time.

Stringent requirements for operational reliability

The stringent requirements for operational reliability were a further aspect in the decision in favour of R&M systems. It was not only the quality of the data transmission lines, but also the electromagnetic compatibility (EMC) of the copper cabling systems that had to be demonstrated by corresponding independent tests. In laboratories approved by the Federal Office for Post and Telecommunications EMC tests of this kind were carried out on corresponding active components, with each sub-order requiring separate tests.



Building complex Jakob-Kaiser-Haus



Paul-Löbe-Haus

German Bundestag Berlin

All the buildings of the German Bundestag were equipped with a higher-order uniform data-communication platform. The buildings on the inner bend of the river Spree contain 100% R&M components.

- 4 000 individual workplaces
- 5 700 rooms
- 60 000 copper and FO ports
- Cat. 5e (but up to 250 MHz)

get more German Bundestag

- Project experience
- Technology leadership
- Security
- Flexibility
- Quality
- Installation convenience



Flexible project management

The four-year timespan for realisation of this project inevitably led to some problems, for example as a result of changes in construction. During all the project phases there was a mechanism for fast tracking solutions in close consultation on site with the client, the designers of «Technikverbund Parlamentsbauten», and the companies involved. In this context, R&M's long-standing experience with large projects, as well as its ability to quickly and flexibly respond to customer wishes, proved particularly advantageous.

Buildings of the German Bundestag – function and history

The German Bundestag is of course above all the Reichstag with its austere cupola and its turbulent history. Built in 1894 by architect Paul Wallot, it featured a cupola above the parliamentary chamber which was destroyed by fire in 1933. The Second World War left only a ruin with a damaged cupola, which was blown up during the first clean-up operations at the beginning of the fifties. In 1955 the German Bundestag decided to commence reconstruction work, which was completed in 1973. Most recently, the Reichstag was reconstructed by architect Sir Norman Foster who, in 1992, won an international competition and gave the building a cupola again, this time made of glass. 1999 saw the opening celebrations of the new Reichstag building.

However, the German Bundestag is made up of numerous additional buildings, which all had to be integrated in the communication network:

- The Paul-Löbe-Haus and Marie-Elisabeth-Lüders-Haus comprising 1 700 rooms, including meeting rooms: contains accommodation for members of parliament, committees and their secretariats, specialist scientific services, the central parliamentary library, administration and a restaurant
- The Jakob-Kaiser-Haus comprising 2 000 rooms: contains 60 % of the offices for members of parliament, party staff and their meeting rooms, workrooms for the vice presidents, rooms available for use by the upper house and the government, the press centre, media services and other functions

Energy supply to the German Bundestag

In the construction and conversion of the buildings, particular emphasis was placed on an ecological energy supply. The glass cupola as an important light source makes an important contribution to this. A funnel-shaped cone, which is open at the top, is suspended within the cupola. The cone features 360 mirrors which direct daylight into the chamber. If the sunlight is too strong, part of the mirrors can be covered by means of a computer-controlled sun-screen. At the same time, the cupola is also used for natural and thus energy-efficient ventilation of the building. Spent air is directed upward via an exhaust air nozzle and escapes through a central opening, ten metres wide, in the cone. Hidden in the cone is also a heat recovery plant which withdraws useable energy from the exhaust air and makes this energy available for heating the building.

The heart of this exemplary energy concept is quite unique. Two block-type thermal power plants, which are powered with biodiesel fuel, provide electricity and heat and also make it possible to carry waste heat generated during combustion away to a natural salt water deposit below the Reichstag building. There, the water, which has a temperature of 70 degrees, is stored till winter when it is used for heating the Bundestag buildings. In summer, absorption type refrigerating machines use part of this exhaust heat for cooling the buildings. A second water reservoir at a depth of 60 metres is used as a cold-storage pool. The winter cold is collected and stored for summer in order to keep the buildings cool during periods of high temperature.



Reichstag building
010.3143



Marie-Elisabeth-Lüders-Haus
010.3177

Strong networks for high sales revenues

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The Mercator Group is one of the largest and most successful trading enterprises of south-eastern Europe. It operates numerous shopping centres and entertainment centres in Slovenia and neighbouring states. R&M implemented several extensive network solutions for this trading heavyweight.

Apart from foodstuffs, the range of traded goods of the Mercator Group includes fashion, furniture, textiles and electronics. In addition, it is involved in the catering trade and is a licensee of Intersport. In third-party projects for shopping centres and cinema centres, the enterprise sometimes acts as a financial investor. From this leading position, Mercator has also been expanding into neighbouring countries. In Croatia it has become the third-largest foodstuffs producer, while in Bosnia-Herzegovina, Serbia and Montenegro it owns further shopping centres.

Structured cabling as a success factor
For Ljubo Jurak, Head of the IT Division of Mercator, the network infrastructure played a decisive part in the Group's success. «Thanks to top-quality cabling technology, our network is easy to operate, with maintenance expenditure being low, despite our stringent requirements,» explains Jurak with satisfaction, and adds, «In the final analysis, the best software is to no avail if the infrastructure does not meet the requirements.»



Stas Kalan
Whitebook author and Project Manager SRC.SI



010.3160
Mercator's range of foods – everything for a healthy lifestyle



A decisive quality advantage

After some negative experiences with lesser-quality network installations in Croatia and Serbia, Mercator management had performance specifications drawn up which detailed all their requirements for structured cabling systems and communication networks. The company SRC.SI from Ljubljana was commissioned to find a uniform solution for all business segments of the Mercator Group. SRC.SI decided in favour of a network of the R&M brand. In the words of team leader Stas Kalan, Project Manager and Supervisor at SRC.SI: «The decisive factors in our decision were the quality and the good price/performance ratio of R&M.»

Extensive network solutions

In the course of the project, supermarkets and shopping centres all over Slovenia were equipped with R&M technology. Cabling of the Mercator Center in Celje was the most extensive individual project. In this case the network not only includes the supermarket but also a cinema centre, a conference centre, a football stadium and a sports hall.

In addition to the large shopping centres, under the management of Branko Dobaja (Mercator), approximately 500 smaller regional shops were equipped with structured cabling by certified R&M partners. Conversion of a further 150 branches is planned. By way of this network, all the sales outlets are connected to the central server, with all their data (turnover, stock holdings etc.) being sent to the computer centre. Logistics, stockkeeping and accounting can thus be controlled centrally.

A good partnership

The R&M distribution partner for Slovenia, the company Etra d.o.o., was established in 1994 as an IT service provider. In 2002 Etra commenced distribution of R&M products under Sales Manager Jelko Kajtna. This enterprise is the sole R&M agent in Slovenia. With a dynamic approach and enthusiasm for R&M products, Etra has achieved a lot. At present, already more than 60 certified installation technicians, 22 certified planners as well as more than one hundred top customers from various sectors all over Slovenia are working together with R&M.

Networks of Mercator Slovenia – facts and figures:

- Mercator Center Celje:
48 km Cat. 5e/FTP cable
700 ports Cat. 5e/s modules
WLAN in the supermarket
- Entertainment centre Kolosei with 5 cinemas:
9 km Cat. 6/UTP cable, 160 ports
Cat. 6/UTP
- Sports hall and conference centre:
11 km Cat. 6/UTP cable,
240 ports Cat 6/UTP
- Football stadium:
4 km Cat. 5e/STP cable,
60 ports Cat. 5e/STP
- Mercator Center Domzale:
38 km Cat. 6/STP copper cable
530 Cat. 6 modules, 130 m fiber optic cable

Filling up the tank via satellite

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Petrol Holding is one of those enterprises in Bulgaria that, with great dynamism, is driving the establishment of a modern infrastructure and an efficient economy forward. Petrol Holding enlists three factors in its endeavour: a satellite, a network of petrol stations, and a Swiss enterprise by the name of R&M.

Established in 1931, Petrol has become the market leader in the trade with mineral oil derivatives. A country-wide petrol station network by the trade name of «Petrol» supplies customers with petrol as well as diesel fuels, engine and gear oils and other products. The logistics infrastructure includes 80 storage facilities all over the country with a total capacity of 1.5 million cubic metres, two sea ports on the Black Sea, as well as a port on the Danube. Up to 2004, the enterprise invested a total of more than 83.5 million euros (129 million CHF) in this modernisation and reconstruction of its service station network and its administration.

Fuel and telecommunication

In a country with an area almost three times that of Switzerland, a solid foundation of the economy depends not only on a reliable and complete fuel supply. There is another factor which is at least as important: that of telecommunication. In this regard, Petrol Holding was facing an enormous challenge: until 2003 there was no quality well developed country-wide telephony network in Bulgaria, let alone broadband connections. The solution was obvious and has been in orbit since last year. Petrol established a subsidiary by the name of Transat to construct and operate a country-wide telecommunication network via satellite. Today, it is not only all the 440 petrol stations that intercommunicate via this wireless WAN, but also other enterprises and private customers that are accessing the network.



One of the most modern petrol stations in Bulgaria

From the WAN into the LAN

Satellite connection itself was of course not the be-all and end-all. At issue was how to bring the available bandwidth quite literally down to earth. It was necessary to provide the entire Petrol Holding enterprise with a modern LAN. This was an extensive and complex project because, apart from its network of petrol stations, Petrol Holding also has central administrative and office buildings in Bulgaria's principal cities. R&M and its certified local partner, Freenet Bulgaria, were selected to carry out this demanding task.

Group-wide network

Under the governance of Petrol Holding's IT Department a project team was established to accomplish the whole set of tasks. In the first stage of the project, within three weeks, a five-story training centre in the city of Varna as well as depots and warehouses for mineral oil products were equipped with structured cabling systems. The second stage involved the installation of shielded Cat. 5e cabling in 90 completely renovated «Petrol» service stations, a task completed within four weeks. In the third stage, 198 smaller service stations were equipped with SOHO networks and R&M Mini Cases. In order to ensure smooth maintenance and optimal operation of the networks, as the next step R&M carried out qualified partnership program (QPP) training. In this program, 16 installation technicians of the subsidiary «Petrol Technica» acquired the respective know-how. Moreover, a capable network was installed at «EUROBANK», another subsidiary of Petrol Holding.

EU standard and beyond

With the new R&M network, the group wide voice and data communication system of Petrol Holding has achieved a level which ensure investment security for years to come. And incidentally, «Petrol» service stations can now offer services that would even be very welcome in Switzerland and in the EU region. For example, customers can not only fill up with fuel, but can also download the latest information: About 300 «Petrol» service stations have their own information terminals with internet access. And those who wish to try their luck with lotto or the football pools can also do so on site.

Network of Petrol Holding Bulgaria – facts and figures:

- Customer: Petrol Holding
- Project Manager: Petrol Holding's IT-Department, certified R&M distributor Freenet Bulgaria, R&M Austria
- Structured cabling systems in petrol stations and company buildings for the purpose of networking via satellite
- 90 petrol stations Cat. 5e LAN
- 198 petrol stations SOHO networks with Mini Cases
- QPP training
- Network installation in the training centre and in warehouses
- Network installation at the subsidiary EUROBANK

A solar house with multimedia cabling by R&M

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By using state-of-the-art technologies, a SolarHausPlexus® home unit uses an absolute minimum of energy for heating and hot water. Just as innovative as the architecture is the provision of connections for the telephone, CATV and network. With its multimedia cabling, R&M convinces customers and residents alike.

Low energy consumption yet excellent comfort

For houses and apartments, the «Minergie» minimum-energy standard permits the use of only a fifth of the energy for heating, ventilation and hot water that is consumed on average in Switzerland (see table below).

Giovanni Cerfeda, an architect and entrepreneur from Winterthur who was among those awarded the Swiss Solar Prize 2000, improves on this value by a factor of ten with his specially developed construction concept SolarHausPlexus®.

In two stages he built 46 solar homes in Oberseen, on the outskirts of Winterthur, through his enterprise Ecobauhaus AG.



A secluded garden in the modern SolarHausPlexus® estate «Am Chräbsbach» in Oberseen

The solid construction makes for a special self-regulating heat distribution system. In winter, the building mass is kept at a temperature of 22°C by hot water that has been heated to 23-27°C by solar energy and geothermal energy. This ensures an indoor climate that is always agreeable, even during extreme temperature fluctuations.

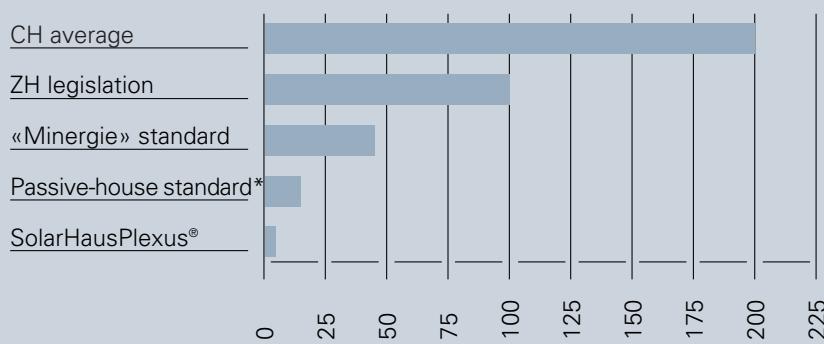
However, the SolarHausPlexus® embodies not only low energy consumption and thus low maintenance expenditure, but also excellent comfort and healthy living. Thus, great care has been taken to ensure

controlled ventilation that constantly feeds fresh clean air into the apartment, and to minimise electrosmog. The latter has been achieved by star-shaped electricity distribution and controlled disconnecting of the network.

Open to innovation

While at first the communication cabling was conventional, i.e. via a separate infrastructure for telephone/ISDN and CATV, for some time now, only the multimedia cabling system from R&M has been used in all SolarHausPlexus® projects. Giovanni Cerfeda first came across this concept in

Diagram of the energy requirements for heating, ventilation and hot water in kWh/m²a

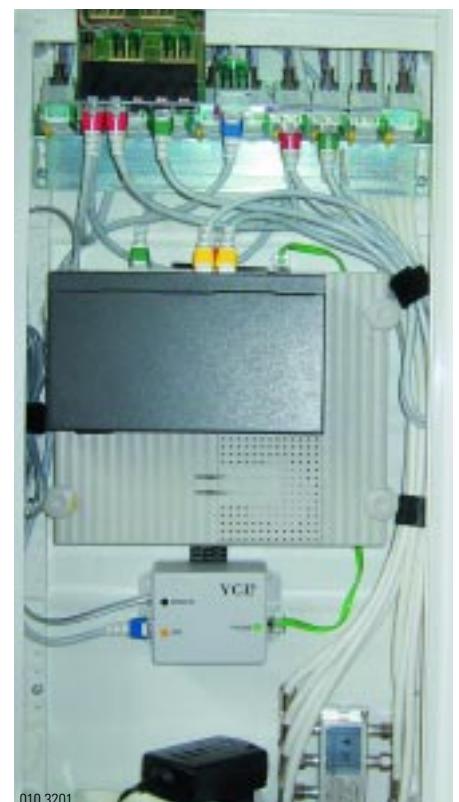


*(excluding hot water)

get more
Multimedia outlet

- Easy planning
- Logical star topology
- Availability of all connections in all rooms
- Only one outlet for all applications
- Easy adaptation by patching in the distributor
- Safe investment in the future
- Optimal price/performance ratio

@ **R&M**



a specialist article, was immediately taken by this R&M solution, and after a presentation by R&M of the concept was convinced from a professional point of view too.

When compared to conventional solutions, this system provides a significant advantage because planning expenditure is substantially reduced. Often a user decides at a very late stage to have additional CATV/SAT, telephone or network connections – at a time when the conduits have already been installed. This not only results in correspondingly high expenditure for alterations (expenditure that often cannot be fully passed on), but at times also results in planning errors, which then lead to unsightly cables. In contrast to this, with the multimedia connection outlet from R&M, all the connections are integrated and can be planned in from the outset: the customer no longer has to decide on the location of each individual outlet.

Advantages outweigh costs

Compared to a conventional solution, multimedia cabling is only slightly more expensive, yet comes with numerous advantages:

- Simple planning
Only one multimedia outlet has to be planned per room (in larger rooms several outlets are recommended).

- Logical star topology
The R&M solution and the SolarHausPlexus® concept thus ideally complement each other.
- One outlet for everything
A single outlet covers all applications: ISDN, analogue telephony, CATV, SAT and network connection (Ethernet).
- The user thus has access to a solution that represents an absolutely safe investment in the future, provides real added value and an ideal price/performance ratio.

Customer satisfaction counts

Mr Marty, who lives in one of the houses in Wiesendangen that feature R&M multimedia cabling, is accordingly positive in his comments. Thanks to the star-shaped cabling and the central distributor, adaptations can be made at any time simply by patching in the distributor, and CATV and SAT signals can be carried via a single coaxial cable and the same multimedia outlet. Similarly, a change in provider (CATV or telecom) is possible at any time by simple patching and without alterations to the installation. Mr Marty considers the availability of an adequate number of connection points for all communication devices a further advantage. He is sure that the investment in this cabling system has been totally worthwhile, and as an enthusiastic user of multimedia cabling by R&M he is fully convinced that he is well prepared for the future too.

SC-RJ – the smallest in its class

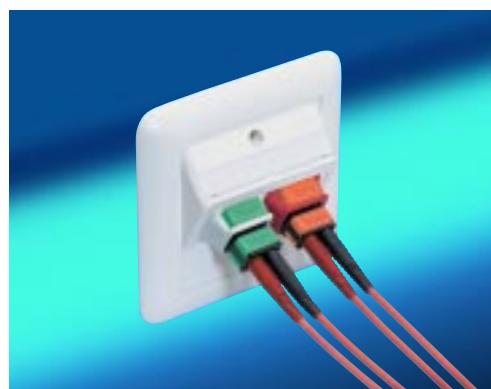


A PLUG THAT BRINGS WORLDS TOGETHER.

The new SC-RJ from R&M brings together two previously incompatible networking worlds: copper and optical fiber. It can take optical networks right up to every workplace in business and industry. Further plus points of the SC-RJ:

- Modularity and compatibility to the RJ45-system
- Networksecurity thanks to its 2.5 mm ferrule technology
- Unique systemsecurity thanks to mechanical and color coding.

The SC-RJ from R&M – your direct connection to the future.



Fiber optics go right up to the workplace.

[Get More @ R&M](#)

Fit for the most arduous service conditions

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Connectors for broadband transmissions in an industrial environment or for outdoor applications simply need to be more capable. Meeting the known transmission characteristics is not sufficient. Out there in industry, connectors are exposed to wet, dust and vibrations. But now there are connector concepts for such harsh environments too.

In cooperation with Phoenix-Contact of Germany, R&M has been developing a connector concept, based on the standardised SC-RJ fiber optic connector and the protective system VarioSub, which protects the SC-RJ against moisture and dust, and ensures compliance with protective class IP67. The SC-RJ IP67 connector is supplemented by the RJ45 IP67 and complementary products.

Full development potential

While in terms of office cabling the SC-RJ may have been the «ugly duckling» not being paid much attention, it can develop its abilities to the full in industry. The tried and tested plug faces ST and SMA can no longer meet all the requirements, e.g. in relation to user friendliness and design size.

In contrast to this, the SC-RJ provides features and meets requirements unmatched by any other connector:

- Singlemode 9/125 and multimode 50/125, 62.5/125
- Fiber types HCS 200/230 fiber and POF
- SmallFormFactor design
- Duplex connection
- Push-pull connector action
- Security: codability, plug-out protection
- Standardisation

Industry has recognised the potential, as is clearly reflected in the growing demand for licences, design-ins, OEM business and industrial standards. The fact that the



090.2031
The SC-RJ IP67: designed for use under the most arduous conditions

SC-RJ is not a totally new product has proven to be an advantage.

The IP67 concept from R&M

In the development of the IP67 connector concept for fiber optic connections, emphasis was placed on the transmission-relevant components remaining compatible with conventional products. For example, the IP67 mounting frame has been matched to the R&M mounting plate.

On the connector side, the IP67 bushes (for RJ45 and SC-RJ) interlock with the mounting frame in the push-pull principle so that the entire connection is also able to withstand greater mechanical loads.

Potential extends beyond industry applications

Whether indoors or outdoors, whether dusty or wet conditions, the IP67 concept for SC-RJ and RJ45 opens up new and hitherto untappable potential for the use

of office components – potential which is not at all limited to industrial applications.

Both the SC-RJ IP67 and the RJ45 IP67 are eminently suitable for use under the most arduous conditions and as outdoor connections. They are of particular interest in projects or applications such as:

- Cabling for sports events (broadcasting)
- Interconnecting cables with mobile telephony aerials (original equipment manufacturers, OEM)
- Domestic connections to the fiber optic telecommunication network (fiber to the home)
- Connectors in high-exposure environments in factories (industrial LAN)
- Field connectors for temporary transmissions in defence applications
- Connectors for oil platforms and refineries (industrial LAN)

The best contacts with insulation displacement technology

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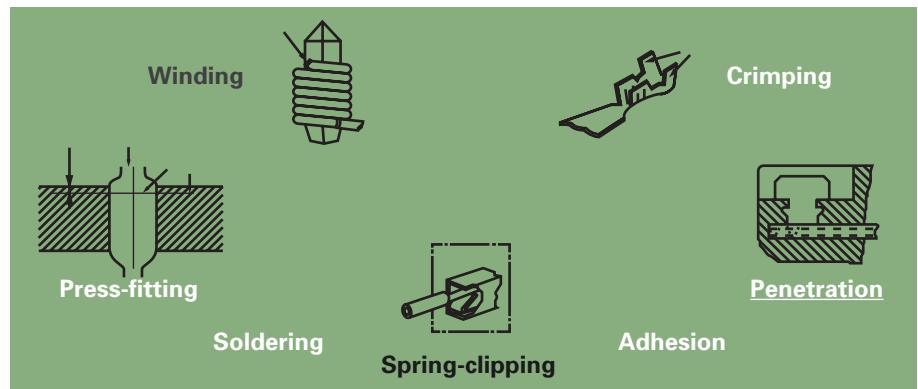


Fig. 1. Precursors and competitors of today's insulation displacement connectors at a glance. Generally, a distinction is made between nondestructively-disconnectable connections (black text) and non-disconnectable connections (white text). In addition there are connections, some of them re-wirable, where the cable is not stripped, but instead the sheath is cut open or penetrated by a spike (underlined white text). Finally there are also screw-type connections.

At times installers have to decide which is the most effective technique for wiring cables – screwing, clamping or soldering. Which provides the best cost-benefit ratio? Undoubtedly the most important question to ask is which technique provides the longest lasting result and offers the best guarantee. R&M relies on insulation displacement connector (IDC) technology.

25 years of experience

When installing copper lines for telecommunication and data networks, the issue of selecting the most reliable connection technology is always at the forefront. With insulation displacement connector technology, R&M provides a suitable and reliable solution for a number of products; a solution based on more than 25 years of experience. As far back as 1978, R&M launched its first IDC on the market.

Clear differences in technology

IDC technology first saw the light of day in the seventies. Its precursors and competitors such as winding or crimping etc. are shown in Fig. 1.

Even a quick comparison of the insulation displacement connector immediately shows the outstanding advantage it has over its competitors, namely that there is no process of stripping the electrical conductor.

This has several advantages:

- Reduced installation time. The cable is simply cut to length and pressed into the IDC.
- No stripping tools are required. The IDC establishes a firm contact when it is pushed into the cable.
- Long-term conductive values, transmission quality and connection reliability are ensured. The cable core is afforded gas-proof protection thanks to the wider contact area and the increased contact pressure.
- The connection can at any time be de-established and re-established.

The wiring principle

The underlying technique of an insulation displacement connector is extremely simple. With a suitable tool, the electrical conductor is pressed into the V-shaped clip contact (Fig. 2). The sharp edges of the IDC blade cut through the insulation material.

With continued pressing, the core of the electrical conductor contacts the edges of the IDC blade. This results in a gas-proof corrosion-resistant connection (Fig. 4). The clipping effect is achieved by the geometric design of the blade.

The parameters for achieving good contact

Since the contact transition is the most important point, all the parameters are subjected to electrical resistance tests during development and production of IDCs.

Good contact force, good conductivity and the correct shape of the base material determine transmission quality and reliability. These objectives have been achieved using the patented shape of the «Tibetan plum»: the inherent mechanical stress is distributed in the most regular way in the base material, thus ensuring reliable, constant contact pressure when exposed to thermodynamic and mechanical loads.

These days, material strength and areas of application can be determined using computer methods (Fig. 2). Using such methods, the IDCs can be optimised for a large range of diameters, which explains why in the case of R&M IDCs the same IDC can handle cables ranging from Ø 0.32 to Ø 0.8mm.

Material selection and coating of the alloys of IDCs are two further important factors which have a significant influence on long-term stability and corrosion resistance alike. R&M has been developing extremely capable alloys and coatings whose composition is a trade secret.

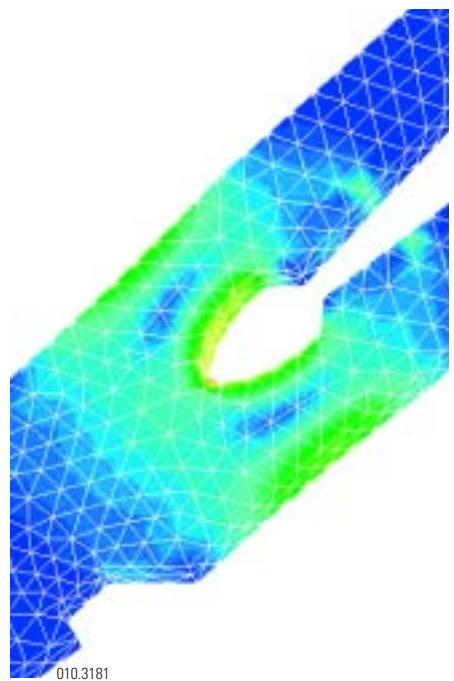


Fig. 2. Materials testing of an insulation displacement connector by means of computer simulation using the finite element method to determine the strength and long-term stability of the IDC blade.

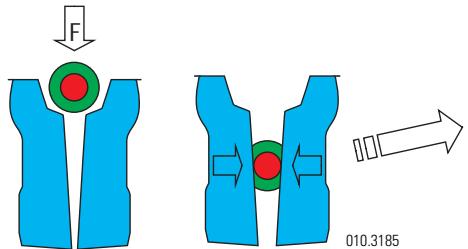


Fig. 3. The insulation displacement principle: the cable is completely pushed into the IDC and thus the contact is established.



Fig. 4. Microscopic enlargement of a cross section of the contacted cable in the IDC. The close connection between the conductor and the IDC is clearly shown. This connection is gas-proof and corrosion-resistant.

Advantages of IDC technology

- Simple wiring process without the need for stripping the cable
- The connection can be de-established and re-established
- Security and very good transmission values

Compliance with the parameters is verified with internationally standardised tests and specific tests relating to individual carriers. R&M's development and test laboratory in Wetzikon tests all its insulation displacement connectors according to the applicable standard IEC 60352-4. In an endurance test over 15 weeks, R&M IDCs are subjected to high temperatures and typical environmental conditions, as well as to saline conditions and industrial pollution gas atmospheres.

Such stringent quality control ensures that the products will exceed their guaranteed service life and perform well in a host of different applications. Thanks to an uncompromising approach to quality, R&M

IDCs have transmission values that exceed by a factor of four the requirements of the international standard IEC 60352-4. Their life expectancy is accordingly much better.

Application of insulation displacement connectors

IDC technology is applied wherever a reliable connection between an electrical conductor and a connection element is required (Fig. 5). This technology is now widespread in the area of twisted pair cabling or in RJ45 connections as well as in power cabling.

The advantages of IDC technology are particularly evident in the quality products from R&M and when developing new systems for industrial or extended office cabling. At R&M, the various IDCs are successfully used for AWG 28 (\varnothing 0.32) to AWG 14 (\varnothing 1.78), both solid core and stranded cables.

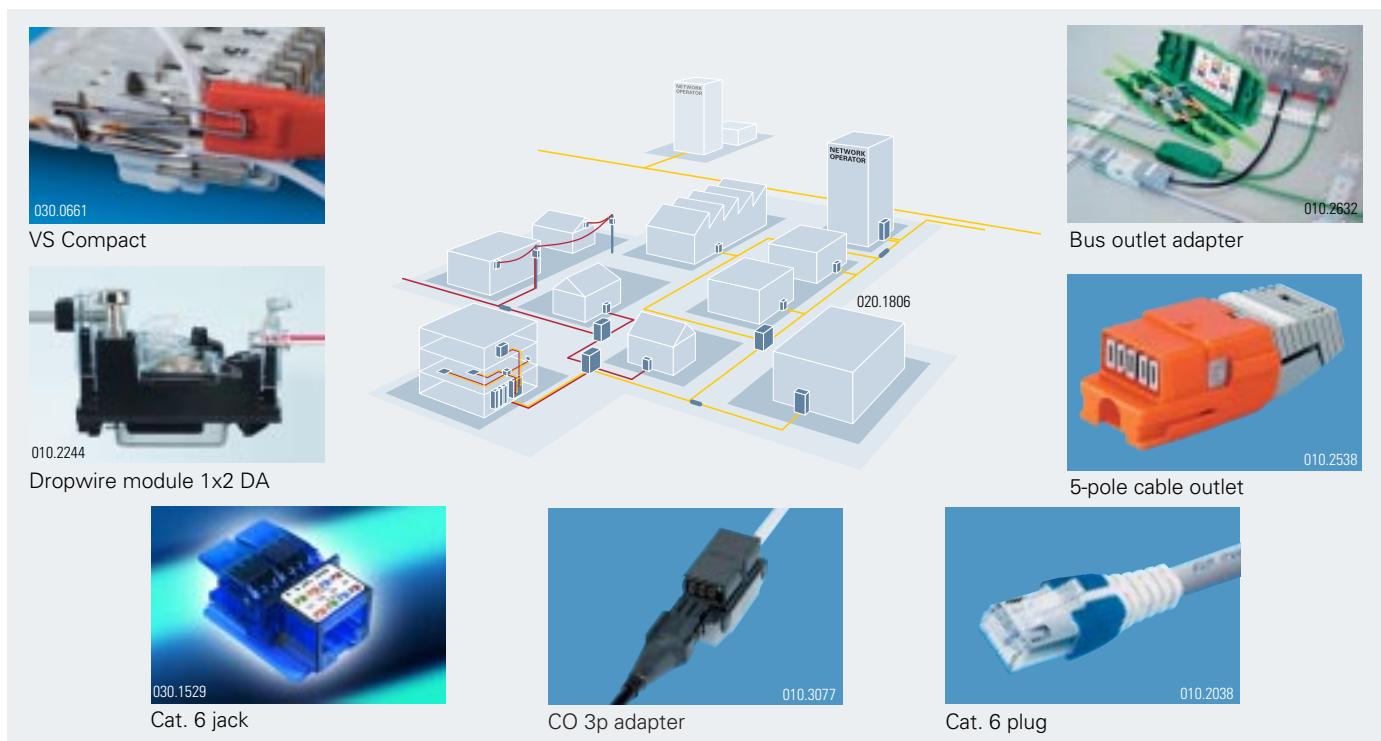


Fig. 5. Applications of R&M's IDC technology in the four strategic segments of enterprise, carrier, residential, and industrial cabling, as well as in power cabling in extended office cabling.

R&M trade fair appearances until March 2005:

Instaldays, Brussels, Belgium
September 22 – 24, 2004

Networks Telecom, Stockholm, Sweden
September 28 – 30, 2004

Cabling Business Show, Tokyo, Japan
October 7 – 8, 2004

Info. Technologies & Communication, Kiev, Ukraine
October 13 – 16, 2004

Electrotec, Athens, Greece
October 15 – 18, 2004

Matalec, Madrid, Spain
October 26 – 30, 2004

Feria Internacional de La Habana, Cuba
October 31 – November 7, 2004

Exponet Köln, Germany
November 16 – 18, 2004

FO Exhibition, Tokyo, Japan
January 19 – 21, 2005

CeBIT, Hannover, Germany
March 10 – 16, 2005

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