ICF NEWS

Issue 47 | March 2004

New ICF Members

The Market for Residential Structured Wiring

(A report by Metalica Ltd.)

Company News

Statistics

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ICF NEWS

NEW MEMBERS

We are glad to welcome **FULGOR GREEK ELECTRIC CABLES S.A.** and **SEVKABEL PLC** as new members of the Federation. Fulgor manufactures low, medium and high voltage cables, submarine cables, submarine optical fibre cables and copper telephone cables. Sevkabel is active in power cables, control cables, wires and cords, winding wires and optical communication cables. More information can be found on their websites under www.fulgor.gr and www.sevcable.ru.

ICF WEBSITE

Our current website has served members since 2001 (first edition 1997) and it is time now for a general overhaul. Work will start in the coming weeks to provide a more user-friendly surface and improved search functions and we hope to have our site up and running by the end of April.

NEWSLETTER

In our next News we intend to cover the following issues:

- OEM Wire & Cable Buyers (Importance/Structure and Performance)
- European Market – the EU Accession Countries
- Electrical Safety

If members would like to see a particular subject covered in future Newsletters please do not hesitate to send your suggestions to the ICF Secretariat. This will help us focusing our work on the interests of our members.

NEW SECRETARY-GENERAL

I am very honored to have been appointed Secretary-General of the International Cablemakers Federation and would like to take this opportunity to thank my predecessor Sam Otohata, who has provided me with all possible assistance in the handover period. Together with Renate Mück I am now looking forward to serving the Federation and hope that you all will continue to support our work by your input and commitment to ICF.

Thomas Neesen

RESIDENTIAL STRUCTURED WIRING

BY METALICA LTD.

Enhanced Information Wiring
The Smart House, Digital Home, Intelligent House, Automated Home, Home Network and SOHO (Small Office / Home Office) are some of the terms being used to describe the developing market of improved residential information wiring which will be of growing interest to cable makers. In this article we look at this evolving market and its potential implications for cable makers with special reference to Western Europe. For those interested in more detail we also give an overview of available technologies in the ICF News Tech Section.

What is »Enhanced Information Wiring«?
In the residential market, enhanced information wiring has long been the stepchild of the much larger market for energy wires. One or two low-grade telephone outlets and a single TV outlet have been acceptable even in new homes in

most countries but this is beginning to change.

The »Smart House« … at present, more of a futuristic vision than reality

Some consumers are beginning to expect multiple outlets for telephone, data and TV throughout the house capable of high-speed data communication. Moreover, connectivity within the home is coming to be expected.

As mentioned above a multitude of terms is being applied to describe enhanced information wiring. Each of these terms implies some form of data networking, with characteristics and functionalities taken from the following list:

- Access to broadband communications
- Multiple access points to the external telecom and data network
- Internal connection of multiple computers and peripherals
- Multiple access points to the external TV network
- Internal connection of audio visual equipment
- Internal connection of audio visual with computer equipment
- The linking of other electrical equipment within a network to allow remote control
- The integration of sensors to allow automated event-driven control of the home environment

RESIDENTIAL STRUCTURED WIRING IN 2001

	Residential Wiring % Penetration	Residential Wiring Value (€ mn)	Multi-Family Dwellings % Constuction	Multi-Family Dwellings % Res. Wiring
North America	9%	116	9%	2%
Western Europe	1%	10	35%	15%
Asia	18%	138	95%	100%
Total	**9%**	**264**	**41%**	**53%**

»Western Europe« includes France, Germany, United Kingdom, Netherlands, Denmark, Norway & Sweden. »Asia« includes China, Hong Kong, Singapore & South Korea. Data includes components as well as cable.

Source: Metalica Ltd. (based on BSRIA data).

At its simplest level, enhanced information wiring includes only the first three items on this list.

The »Smart House« satisfying all eight of the criteria listed is (at present) more of a futuristic vision than reality, although the electronics manufacturers are currently working very hard to change this in the not-to-distant future. In our discussion of the market, we apply the term »residential structured wiring«. This includes any system of information wiring that is capable of carrying broadband signals running to multiple points from a central distribution unit that allows internal network connection between equipment attached to different outlet points. CAT 5 data cable or above is used in such networks. Using this fairly limited definition, the market for residential structured wiring is not particularly large, but it is growing rapidly.

Residential Structured Wiring Market in 2001

The size of the global residential structured wiring market, according to consultants BSRIA, stood at US$ 236 million (€ 264 million) in 2001. The market, which BSRIA labeled »residential cabling«, included components as well as cable, indicating a cable market of a little over US$ 100 million (€ 115 million). The study looked only at the countries that BSRIA deemed to be significant markets and only at installation in new buildings, which accounted for the lion's share of the business.

Current Status of the Market

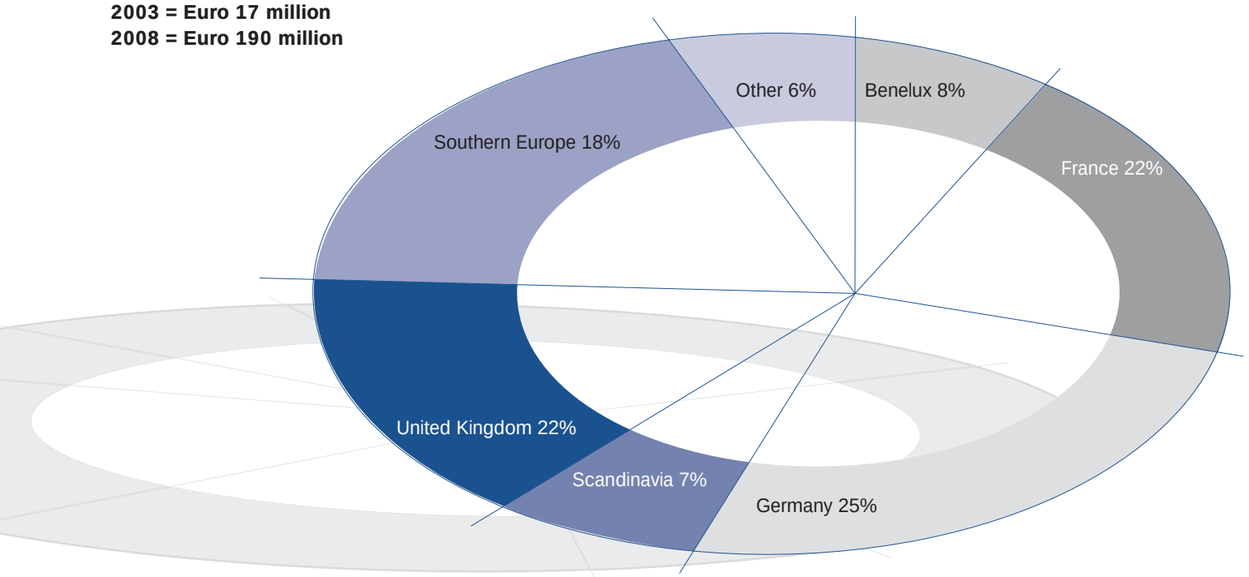
The BSRIA report (produced early in 2002) was very optimistic about the near-term prospects for residential cabling systems. It forecasted the United States rate of penetration rising over the three-year period to 2004 from 10 to over 40% in new buildings, while that in Western Europe was expected to grow from around 1 to nearly 20%. From the higher base, significant growth was also expected in Asia, driven by a near doubling in the rate of installations in China.

Prospects may be greatly impacted by the influence of government and inter-governmental bodies.

Reality turned out to be much less encouraging than the forecasts. In the context of a decline in the 2002 market for data cable and flat sales in 2003 as the commercial market fell away, the rate of penetration of structured wiring in new residences in the United States rose from 10 to nearly 15%, with a slightly more modest increase occurring in Asia. In Western Europe structured wiring has still failed to gain a mass-market (with only about 3% penetration rate).

RESIDENTIAL STRUCTURED WIRING MARKET IN WESTERN EUROPE IN 2003 AND 2008

2003 = Euro 17 million
2008 = Euro 190 million



We estimate that in 2003 the total market (including components but excluding installation) stood at around €35 million. This figure includes installation in existing properties (10-15% of the market) and countries not covered by BSRIA, so the data is not strictly comparable.

Looking at the amount of data cable sold in residential structured wiring systems in 2003, we estimate the figure at around €17 million.

The total amount of LANs-type data cable sold to the residential market is somewhat larger than this as it includes a small element of pre-wiring for optional networking where the option is not taken up and also data cable sales to the residential market where the end use is not part of a structured wiring system.

Even with these additions, however, it is clear that in Western Europe at least, residential sales of data cable still form a relatively small part of the overall premise market, valued at around €800 million in the region in 2003.

Market Prospects to 2008

Over the next few years, it is virtually inevitable that the penetration of home networking will increase substantially. According to In-Stat/MDR figures, only 3% of existing homes in Western Europe are networked.

The development of norms and standards … is necessary to achieve a real penetration of home networks

If, as we have seen so far, network installation continues to be concurrent with or soon after broadband connection, then the number of networks in place should grow quickly as the rate of broadband take-up soars. In most cases, however, the type of home networking concerned, in existing homes, is almost exclusively wireless. For residential structured wiring to really grow, rather more is required.

For the cabled solution to get anywhere near its potential, the market will have to perceive that it is a vastly superior option to wireless and that its capacities are either necessary now or will be sufficiently soon to justify the higher cost of cabling. Because of this, the use of the home network for high level data services is important. In the entertainment area, there are encouraging developments both in the online material becoming available and in the network capability of audio/visual (AV) equipment.

Potential Market Drivers and Barriers

It is clear that the perceived need for home networking is advancing quickly and that this should, with a little luck, be very good for cable. For cable to gain a really high penetration, however, network utilisation has to be of a type that makes cable installation necessary. Market experience to date has not been particularly encouraging. US-based research suggests that the expectations of what a home network can achieve are fairly limited.

The performance of the construction market will have a major impact on the

In a recent newsletter Park Associates claims that »most of the 27% of U.S. households that will own a home network in 2007 are unlikely to have any-

WESTERN EUROPE'S RESIDENTIAL STRUCTURED WIRING MARKET FOR CABLE IN 2003 AND 2008

	Market in 2003 Ratio to New			Market in 2008 Ratio to New		
	Value (€ mn)	**Construction** (€/€ mn Constr.)	**Home Completions** (€ per Dwelling)	**Value** (€ mn)	**Construction** (€/€ mn Constr.)	**Home Completions** (€ per Dwelling)
Benelux	1,3	34	11	15,0	344	111
France	2,0	31	7	41,0	548	119
Germany	4,7	38	13	49,5	346	122
Scandinavia	1,8	69	21	12,5	420	128
United Kingdom	3,7	82	22	26,0	501	135
Southern Europe	2,1	21	3	34,0	291	47
Other Countries	1,1	33	8	12,0	317	78
Total	**16,7**	**39**	**9**	**190,0**	**382**	**93**

Source: Metalica Ltd.

thing more than a PC network or a simple point-to-point multimedia network (one most likely enabled by a wireless home network and a digital media adapter) and most networks are in homes with broadband access, the home network thus being a means by which the investment in broadband can be fully utilised«.

Governments and Inter-Governmental Bodies

Market prospects may be greatly impacted by the influence of government and inter-governmental bodies.

…the fragmented structure of the market is a barrier to growth…

France is a prime example. The country's newly introduced NFC 15-100 electrical code recommends that new homes have a telecom point in each major room and a minimum of three TV sockets in homes of 100 sq. m. and above. The code calls for a minimum of Category 5e FTP cable. This can be a boost to the French market.

At inter-government level, the electrical standards body CENELEC is working to facilitate convergence and interoperability of systems in the European »Smart House« by developing a common Code of Practice applying to all those active in the business. The code is due to be published in August 2005 and forms part of the eEurope initiative launched in June 2002. The development of norms and standards through organizations such as CENELEC is necessary to achieve a real penetration of home networks with wide-ranging functionality, i.e. the networks that are most likely to benefit the cable industry.

Market Fragmentation

The rate of structured wiring installation growth will partly depend on how well the product is marketed. At present, the fragmented structure of the market is a barrier to growth, with a split between the large house builder, small contractor, owner builder and retrofit. The channels to market are very different and most of the companies involved have insufficient market presence to tackle more than their own chosen niche. Marketing is somewhat easier where (as in the United Kingdom) new house building is dominated by a handful of large companies rather than (as for example in Germany) owner/builder exerting a major influence.

Construction Market

Beyond this, the structure and performance of the construction market will have a major impact on the growth in residential structured wiring. In Western Europe, the rate of new residential construction is chronically low in relation to the existing housing stock.

Structured wiring has not done particularly well in capturing its potential mark

In making our forecast for 2008, we assume a fairly modest 15% increase in the rate of new construction compared to the average of the past few years. Our forecast market of €190 million in 2008 equates to a penetration rate of around 30% in new dwellings (which at €200 per dwelling would give a market of €120-125 million) plus a penetration rate in existing dwellings of around 0.2% (giving a market of 65-70 million). For this forecast to be realized there will have to be a rapid take up of data networking and a reasonable performance of cable against wireless technologies. The potential is much greater if, for example, structured wiring came to claim a 50% share in new dwellings and just 1% of existing dwellings annually. The total market could be worth well over €550 million by 2008. This potential suggests that there is some merit in a proactive approach to residential structured wiring market development by the cable industry.

Audio/Visual

Audio-visual link-ups could increase dramatically quite soon. In recent months very cheap media adapters have become available; some are being sold by the large PC companies such as Dell and Hewlett Packard packaged in with subscriptions to online music services. The likely explosion in online music (and video) content, should greatly increase the attraction of networking digital content between computer and AV equipment. As far as music is concerned, sharing of content can easily be achieved using a wireless device. On the consumer electronics front, most companies will very soon be incorporating (inexpensive) network interfaces into their AV equipment, allowing content to be shared between platforms. If the networking capabilities on offer are actually utilised, the potential need for structured wiring rather than wire-less solutions is quite high. A home networking environment with two-way links between computers, audio, visual and gaming equipment may well prove to be beyond the technical reach of wireless technology.

Security/Surveillance/Home automation

Home automation – as it stands – is still well down the list of reasons why home-

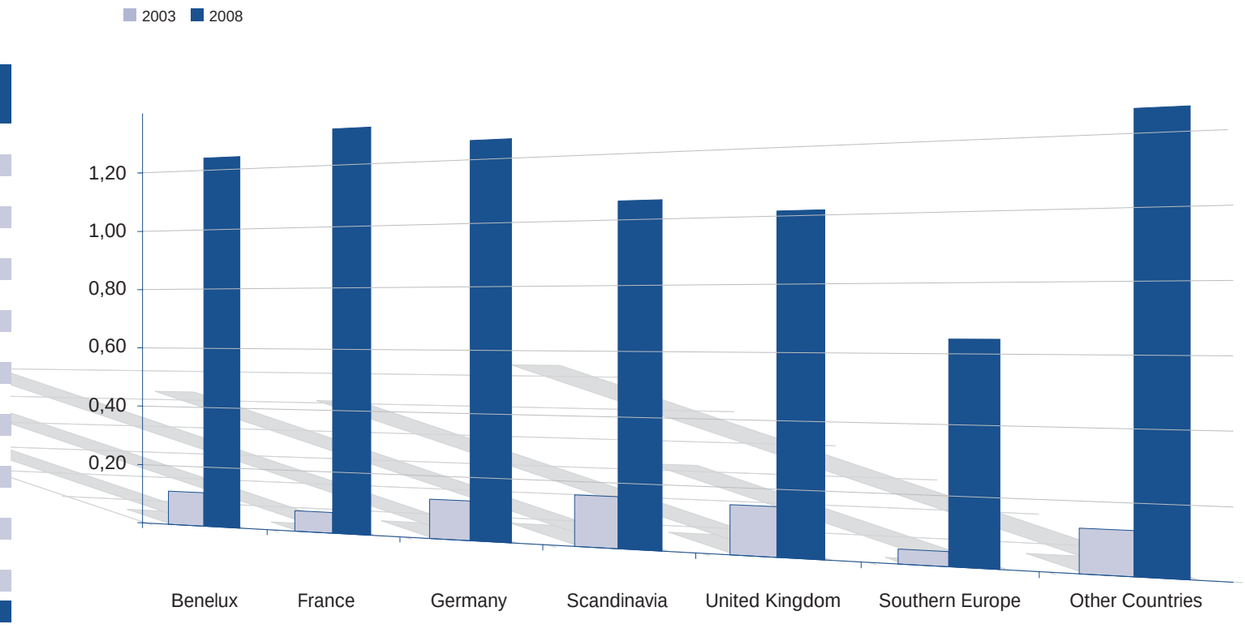
HOUSING STOCK AND THE AVERAGE ANNUAL RESIDENTIAL CONSTRUCTION IN WESTERN EUROPE

	Housing Stock (mn)	Construction Value (€ bn) New	Refurbishment	No. of New Completions ('000) Apartments	1-2 Family
Austria	3,8	6,7	4,4	32	21
Belgium	4,7	4,3	4,9	16	25
Denmark	2,5	2,7	3,5	7	10
Finland	2,6	3,8	3,1	20	10
France	29,6	28,0	37,0	105	194
Germany	37,5	66,4	58,0	143	209
Ireland	1,4	6,4	3,5	10	38
Italy	28,0	20,6	36,6	130	48
Netherlands	6,8	19,3	9,4	19	57
Norway	2,0	3,1	3,7	8	14
Portugal	2,0	10,3	0,9	69	35
Spain	19,9	23,3	10,0	240	102
Sweden	4,3	1,8	4,2	10	6
Switzerland	3,6	9,1	2,8	19	13
United Kingdom	24,8	16,3	28,8	31	137
Total	**173,5**	**222,1**	**210,8**	**859**	**919**

Source: Euroconstruct, Metalica Ltd.

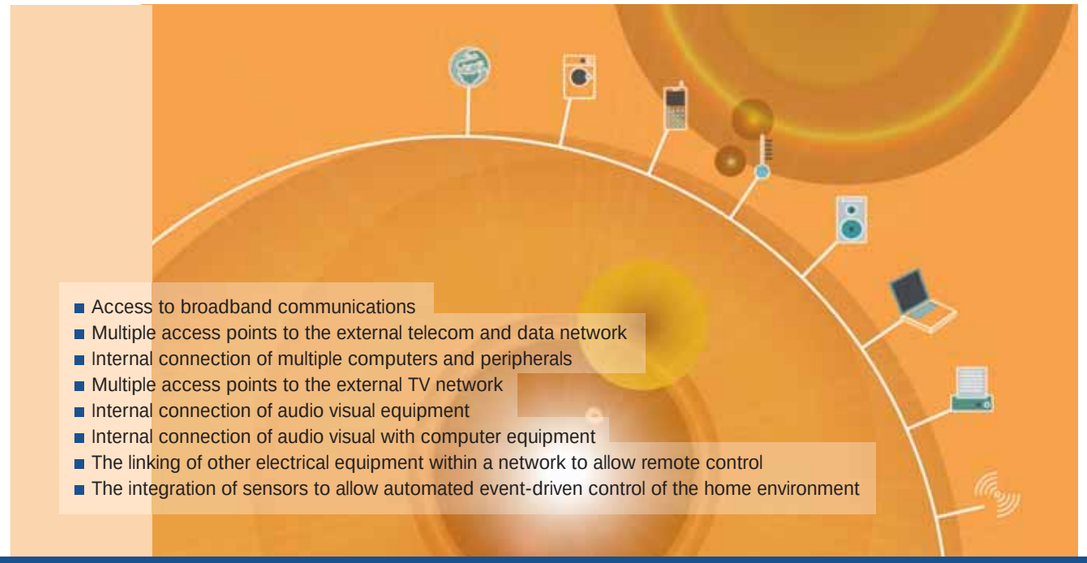
STRUCTURED WIRING INSTALLATION IN RELATION TO THE HOUSING STOCK

(Euros per Dwelling)



owners consider they need a home network. Security and surveillance systems are growing in importance in most European countries, but the need to link them into a network is rarely perceived. There is still little interest in the automation of lighting, air conditioning and the mechanical functioning of gates, doors, windows, watering systems etc. Even further down the line is the inclusion within the network of electrical appliances, such as refrigerators that tell the homeowner what needs to be replenished, although companies such as LG Electronics are working very hard at changing this. At present, home automation is hampered by a lack of perceived need for a home to think for itself and be controlled remotely. High cost and the lack of a universal protocol for linking equipment are serious barriers.

In time, however, the integration of home automation within or alongside a combined infotainment network is likely; it will almost inevitably require a cabled solution.



ICF TECH-SECTION

Our report would not be complete without a brief look at available technologies.

The Types of Structured Wiring on Offer

There is considerable diversity in the types of structured wiring systems being offered in Western Europe. Most are reasonably sophisticated starform cabling system. Simpler apartment block premise networks similar to those prevalent in parts of Asia are evident in Sweden.
The main components of most cabled systems are a distribution box, patch cords, category data cable, outlets, adaptors and connectors. Voice, data and TV video signals are connected to the external networks via the distribution box and patched into the cabling system that radiates outwards in a star formation to one or two distribution points in each major room around the house. The networks will allow broadband access to the external environment at multiple points in the home. It is also possible to route data from one access point to another within the home via the distribution box. Data networks may or may not incorporate video signals from the TV network, but it is generally expected that a structured wiring network should have this capability. There is very little evidence of data networks capable of allowing the automation of the home environment.

The higher level of structured wiring networks should be adaptable to some degree of home automation, but it is normally understood that it requires a separate data network (or »bus« system) running parallel to the power distribution network.

… wiring solutions based on high bandwidth cables will have important implications for connectors as well …

The type of structured wiring system installed has implications for the amount and quantity of cable used. Where telecom and TV systems are separately channelled, both twisted pair and coaxial cable necessarily form part of the system. These cables may be bundled together, sometimes with fibre optic cable to offer greater future proofing, within a single jacket or glued together. This is the solution usually chosen in the United States. In Europe, it is unusual for there to be the large wall cavities where bulky cables can easily be laid. Indeed, trunking along surface conduit is common. Not only is cable bulk an issue, the limited bend radius of coaxial cable can make the use of composite cables difficult in confined spaces. Partly because of the physical constraints, cables of small diameter are much more common in Europe than in the United States.
Although it is common to have both twisted pair and coaxial cable in the network, in high-end solutions it is possible for video to be carried on twisted pair cable, dispensing with the need for coaxial altogether.

UTP – FTP – STP …

The difficulty is that, without compression, TV signals require bandwidth far beyond the 100 MHz of Category 5 or 250 MHz of Category 6 cable. Where coaxial and twisted pair cables run together, it is usual to have the normal diversity of wall sockets. If structured wiring solutions based on high bandwidth cables become more common, this has important implications for connectors as well as cable. At present, the standard RG45 telephone connector is still the dominant medium for connecting data equipment to the wall socket. Designed with low speed communication in mind, the potential for cross talk at the point where the wires straighten without shielding means that the overall capacity of a network is reduced, significantly so for installations with cables above Category 5 or 5e rating.

In general, the higher the specification of the cable used, the higher the value of the market. There is, however, some offset in reduced cable length. Where any data medium can be sent down the same cable type, cable use can be dedicated based on user preference, obviating the need for multiple cable runs. The solution chosen may involve the use of wall plates with multiple connection points to different dedicated services or the consumer option of specifying the function of a socket at the distribution box. With well-planned high grade structured wiring, it is possible to achieve full data networking within most homes using 200-250 meters of cable. The length of cable may be more than double in a less sophisticated cabling system, but the value proposition as far as the cablemaker is concerned is less attractive. With Category 5 and 5e cable being offered at less than one-fifth of the price of high-end products, the market value of lower grade systems can be significantly less.

The cabling solution chosen varies greatly by country in Europe. The higher-grade STP (shielded twisted pair) cable types are commonly used in Germany and, to a lesser extent, in Austria and Scandinavia. FTP (foiled twisted pair cable) use is strongly based in France. In other markets, including the United Kingdom, the market is dominated by UTP (unshielded twisted pair) cable. With investment in the development of standard Category 5/5e UTP being fully written down and suppliers offering it as a commodity product, the work of convincing buyers to specify better quality but higher priced FTP or STP is an uphill struggle in most countries.

Alternative Technologies in Home Networking

While the penetration of residential structured wiring is growing, data networking in the home is growing much faster. A recent market report by In-Stat/MDR estimates that there were 4.5 million home networks in Western Europe at the end of 2003 (growing to over 15 million by the end of 2007). If this estimate is correct, then structured wiring has not done particularly well in capturing its potential market. We estimate that there were 3-400,000 structured wiring systems in place in Western Europe at the end of 2003.

The difference between the two figures is accounted for almost exclusively by wireless networking. With cheap wireless routers now being available and a functionality of network systems that is normally within the capabilities of wireless equipment, this is the most frequently chosen option. As the installation of structured wiring in an existing home is not only disruptive but also very expensive (often over € 2,000, or double the cost of new build installation), the wireless argument is pretty convincing.

There are other challenges to standard data cabling options apart from wireless, although they have not yet proved to be particularly troublesome. Power Line Communications (PLC) over the existing electricity infrastructure is one option. Still fraught with technical problems, PLC could offer a reasonable means of extending a network at low speeds (particularly for audio signals) and, with technology improvement, could find a role in home automation, where data and powered functions are often required simultaneously. Another contender is Plastic Optical Fiber (POF). While POF is a data cable product, it is not a market in which most data cable makers have a presence. The high band-width and low connector cost make POF a potential contender at the high end of the home network market, although this is a market space that is rapidly being occupied by copper.

COMPANY NEWS IN BRIEF

PROVIDED BY METALICA LTD. UK

Major Changes in US Data Cable: The new company **Belden CDT Inc.**, based in St. Louis, is to be formed through the announced »merger of equals« between the two US-based telecom/data cable companies Belden Inc. and **Cable Design Technologies** (CDT), subject to shareholder approval. The transaction is expected to be complete in the second quarter of this year, giving former shareholders of CDT around 45% of Belden CDT and former shareholders of Belden 55%. The merger is expected to create the world's leading supplier of electronic and speciality wire products, with combined annual sales of US$ 1.3 billion. Savings of US$ 25 million are expected to result from the combination of operations, exclusive of any further savings that may result from the closure of plants or distribution centres. The announced formation of Belden CDT follows the acquisition of **Avaya's** data cable business by **CommScope**. (Avaya had been the number one supplier of LANs cable in the United States.) The CommScope/ Avaya deal was largely finalised early in February, the purchase price for Avaya's Connectivity Solutions unit being set at US$ 250 million subject to post-closing adjustments, together with 1.8 million CommScope shares and US$ 65 million in assumed liabilities.
Belden Sells Outside Plant Copper Telecom Cable Business to Superior Essex: Following the merger with CDT, in March Belden Inc. entered into an agreement with Superior Essex Inc. to sell its North American copper telecom cable business for a price expected not to exceed US$95 million.

Alcatel and Draka Combine Fibre Optic Businesses: On February 10th, the two European cablemakers, **Alcatel** and **Draka**, announced plans to combine their optical fibre and fibre optic cable businesses in a jointly owned company. The Draka interest is set at 50.1%. The new company, with interests in Europe, China and North America, is expected to make € 670 million in revenues in 2004. Draka intends to issue 150 million of new equity in parallel with the creation of the new company.

Wilms Cable Interests Grow: Sweden's **ABB** has sold its German power cable subsidiary **Energiekabel** to the **Wilms Group** of German wire and cable makers. According to ABB, the move will prevent the closure of Energiekabel; Wilms is committed to taking on 200 of the company's 350 staff. In 2003, Energiekabel made a loss of € 5.9 million on €60 million sales.

Developments in Croatia: Elka d.d., owner of the newly-formed Croatian cablemaker **Elka Kabeli d.o.o**, is to increase the capital of its wire and cable subsidiary to US$ 62 million in preparation for its sale by international tender. The transfer of cable assets to the now debt-free Elka Kabeli and subsequent capital increase are thought to be in response to interest having been shown in the parent company by fellow Croatian cablemaker **Eurocable**.

Wire Harness Investment in Central Europe: French wire harness maker **Cemme Thome** plans to set up a 2.5–3.0 million factory in eastern Slovakia, creating 280-400 jobs. The company already has a Slovak subsidiary, Cemme Thome SK.

Consolidation in Russia: Plans to purchase two unspecified cable companies for US$ 5 million have been announced by the parent of **Sevkabel**, Sevkabel Holdings.

Plant Closure in Israel: The Israeli subsidiary of the US-based Superior group, **Superior Cables**, has announced the closure of its Maalot data cable factory. Production equipment is to be transferred to other company facilities.

African Plant News: Zimbabwe's **Central African Cables Limited** (CAFCA) is to spend US $1.2 million on upgrading its MV power cable plant in order to boost domestic output and to strengthen its position in the regional market. The company will co-operate with is major shareholder, South Africa's **African Cables**, in promoting exports. In Angola, the »Ex-Diogo D'Avila« cable plant is set to start operating in March, well behind schedule. The plant is being rehabilitated by Portuguese **Quintas & Quintas**, which acquired the unit for an estimated US$ 2.1 million. The new company, to be called Quintas & Quintas-Angola, will initially produce 6,000 tpy of wire, to be sold locally and in neighbouring countries.

Reopening in Argentina: Italian cable maker **Pirelli SpA**, is to reopen its La Rosa telecom cable facility in Argentina. Initial production will be of copper cable, with fibre optic cable production expected to follow.

FibreCore Inc. Files for Chapter 11: The US holding company **FibreCore Inc.**, with interests in optical fibre and preform, has filed for protection under the Chapter 11 Bankruptcy Code as it is unable to raise working capital. The move follows an arbitration award of US$ 5.3 million in favour of Japanese company **Shin-Etsu Chemical Co.** in July 2003. Fibre Core's operating fibre subsidiaries in Brazil and Germany are not included in the filing.

Phelps Dodge Consolidates in Winding Wire: The US winding wire business of **Phelps Dodge Corp.** is to be rationalized with the closure of its El Paso, Texas plant and investment of US$ 1.5 million or more in Fort Wayne, Indiana. The El Paso closure will mean 125 job losses. The decision to invest in the much larger Fort Wayne facility, which had also been considered to be under threat, was helped by the offer of US$ 0.9 million in tax abatements and other incentives by local government. About 10% of El Paso's output is to be transferred to Fort Wayne with most being shifted to non-US facilities, primarily Monterrey in Mexico.

General Cable Announces Plant Rationalisation: A staff cut of about one hundred at **General Cable's** Marion, Indiana industrial cable plant to 65 workers has been announced. The remaining workforce will concentrate on mining and other speciality cables. Most of the product lines presently made at Marion will be moved to other company facilities. A charge of US$16 million will be set against the General Cable accounts. The company blamed the move on the »prolonged and unprecedented decline in the North American industrial cable market«.

Furukawa Electric Realigns Foreign Holdings: A 42.5% interest in the Chinese power cable joint venture **Shenyang Furukawa Electric** has been purchased by **Furukawa Electric** for HK$100 million. In the United States, the company has announced the integration of its holding companies **Furukawa Electric North America** and **Fitel USA Corp.** to form **Furukawa Electric North America Inc.** The move is intended to improve administration and support systems in North America, which had become over-complicated since the acquisition of **OFS** (Optical Fibre Systems).

Japanese Cablemakers Consolidate Further: A study is soon due for completion relating to the integration of the power cable operations of **Furukawa Electric** and **Fujikura** in Japan. The companies have already transferred underground cable engineering and R&D to a joint venture, **Viscas Corp.**, which may be the focus of any future cooperation. Separately, **Furukawa Electric** has announced with **Yazaki Corp.** a cooperative agreement in commodity grade electric wire businesses, covering construction wire and electronics materials, with combined sales of ¥ 60 billion.
Cooperation in production and logistics and the expansion of existing OEM relationships are envisaged by the companies.

Expansion of Japanese Autoharness Operation in Vietnam: The **Furukawa Electric** automotive harness subsidiary, Furukawa Automotive Parts (Vietnam) Inc., plans to increase its export sales from US$ 85 million in 2003 to US$ 100 million in 2004. As the company is capacity-constrained, this is expected to mean the building of a second plant with 2,000 employees, to complement the 4,200 employees at its existing unit. Meanwhile, **Sumitomo Wiring Systems Ltd.** is to form an 80/20 joint venture with local interests to make automotive wire harnesses. The new company, located near Hanoi, will initially invest ¥1.1 billion (US$ 10.2 million) and targets sales of ¥ 5.3 billion (US$ 49 million) by 2006.

Winding Wire Investment in China: The Taiwanese cablemaker **Ta Ya Electric** is to spend US$ 32 million on a winding wire and assemblies plant in Kunshan as its current facilities are running to capacity. During the first phase, the 7,000 sq.m. plant is expected to produce 6,000 tpy, with commercial start up planned for October 2004. The Malaysian subsidiary of the German Elektrisola winding wire company, **Elektrisola (M) Sdn Bhd.**, has announced the intended completion of a plant near Shanghai, China, in 2005, The company will aim production from its new plant at international markets outside Asia, while the 30,000 tpy it makes at Kampung Janda Baik, Malaysia will continue to be produced for Asian markets. Capacity at the recent joint venture between Chinese winding wire producer **Tongling Jingda** and **Rea Magnet Wire** of the United States, **Guangdong Jingda Rea Special Magnet Wire Co. Ltd.**, is to increase from 4,000 tpy to 10,000 tpy due to a combined US$ 2.8 million investment by the two parent companies.

Major Initiative by LG in China: Korean **LG Cable** and **LG Industrial Systems** have signed a memorandum of understanding to develop a huge 330,000 sq.m. industrial site in Wuxi, Jiangsu province, by 2006. The intended investment includes that in LG Cable Wuxi Ltd, a wholly-owned automotive wire subsidiary of LG Cable. This project is already underway, with operations due to start in April 2004. LG Cable is investing US$ 8 million on the set up of LG Cable Wuxi on its 66,000 sq.m. site. It targets sales of US$ 160 million in 2008 for the subsidiary. Plans for further investment by LG Cable in Wuxi include projects in copper wirerod, power cable, fibre optic cable, electronic tube and busduct. LG Industrial Systems is to invest US $13 million in an automated equipment production and sales affiliate.

Samsung Invests in Fibre Optic Cable in China: The Korean electronics giant **Samsung** is to invest US$ 56.8 million in an optical fibre and fibre optic cable plant in Jaikou bonded Zone, Hainan province in China.

Consolidation in China: The **Jiangsu Yongding Group** is to acquire the Hubei **Hongqi Cable Group**. Yongding Cable is primarily a telecom cable company, while Hubei Hongqi is an energy cable making utility, industrial and installation products.