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## Microelectronics' resource development through the revitalisation of the computer applications sector

*by Jacques R. LORNE, en collaboration avec Pierre VOLAIRE et Yann BIDAULT*

*It's no secret that heavy threats weigh upon French Microelectronics. Whether it's a question of economic difficulties affecting the mass markets or the threats of production relocation - or even Research and Development - everything indicates that only one approach mobilising all of the actors involved could make it possible to survive the crisis "without leaving feathers" : playing the innovation card.*

But before going further, we must recall what Microelectronics represents in our region, and to situate its importance, the figures speak for themselves. Indeed this field holds an economic power that's more than substantial, notably on the level of employment. Nearly 10,000 people work in the domain, including 700 researchers and 2,800 design engineers in over 100 establishments, 6 of which are part of the world's 12 top industrial groups, not to mention all the employees prefigured there. The Region ranks favourably, with 35% of the nation's manufacturing of semi-conductors. But there are also the 300 engineers who are trained each year, that number probably doubling by 2005, which will be made possible thanks to the Georges Charpak Microelectronics Centre of Provence, the new school of engineering, wholly devoted to the sector, situated in Gardanne, just next to Aix-en-Provence, in the Bouches du Rhône County.

After such an update, one can better grasp how the evolution of Research and Development will play a major role in innovation and that our region's actors understand they'll need to take a decisive position in the creation of the PACA Region's Integrated Microelectronics Centre. But although it is indispensable, technological excellence surely isn't enough. To innovate is also to anticipate the needs of the market and the expectations of the clients. It also means being able to react quickly enough to be the first to translate the expected waiting time for the innovative product, which allows a cost-competitive logic to arise, too often destroying the value.

### **Dynamising the electronics field, by giving the means to create a network of energetic companies**

The studies made by the supporting organisations (ANVAR, DRIRE, MDER, CREMSI...), reinforced by the words of the electronics field professionals in 2003, show that in order to get out of this crisis, the sector needs a dynamic small and medium-size business network oriented towards niche markets and industrial solutions for small and mid-series, for which innovation and reaction-time are motors of success. It's precisely this dynamism which encourages the approach of innovation and of differentiation among the big industrial players. The regional presence of recognised players like Gemplus, ASK, Cybernétix, among others, allows for the existence of a small and medium-sized network fabric opening in this sector in terms of developing/integrating, engineering and services... The omnipresence of accompanying organisations like CREMSI, UDIMETAL, Provence Promotion, Toulon Var Technologie, PopSud, Méditerranée Technologie, etc. that the small and medium-sized businesses could lean upon is a sizeable advantage. If we add to this, the possibility that existed for some time to create links with initiatives like CIM (Centre intégré de microélectronique)-PACA, we see that all of these united forces greatly benefit the PACA Region's Microelectronics sector. But there are also a few, generally well-known weaknesses that must be eradicated, and this isn't always easy. They're present on several fronts, particularly those which concern the lack of small and medium-sized businesses' visibility in the electronics field, as well as the absence of Research and Development departments at the big companies. It's a detrimental situation compared with competing sites, in France or abroad, as is the case with Grenoble, Munich, and Agrate, for example. There is another significant phenomenon currently affecting the sector: the economic weakness running rife for quite some time in the markets and finally the absence of dedicated financial structures (priming funds) and the little consumption of European funds recorded. But having said all that, it's not the same story for the downstream sector. Indeed the promotion of cooperation in Research and Development between the research laboratories, the industrial corporations and the small and medium-sized businesses (which the actions driven by CREMSI as well as CIM PACA's creation largely illustrate) isn't sufficiently accompanied by technology transfers to these small and medium-sized businesses. In fact we can state that on a wide scale, they've only had limited access to current technological innovations up until now. This access included ASICs, SoCs, Smart Cards, Smart Objects, while it's clear that it's the small and medium-sized businesses in the electronics' applications sector that are right on the way with emerging demands in new products.

### **A new centre at CREMSI, to identify the actors and to position and list the skills**

As we take a good look at this phenomenon, we can reveal several causes of the impaired transfers between Microelectronics and the applications sector, notably the prominent place of principal/sub-contractor relations among the actors, which closes the markets and hinders the transmission of information. But there's also the small and medium-sized businesses' own structural constraints, such as the lack of time, means and a culture of partnerships. These barriers are undoubtedly among those that until now have held back any organising of a network of proper skills that could revitalise deals and innovation. CREMSI, aware of these problems, has elaborated a plan of action determined to revitalise all the small and medium-sized businesses of the field in an approach that complements high-power projects like CIM-PACA. Structurally, it means establishing a centre dedicated to business development and the creation of assets through those businesses. The initial efforts consist of identifying the actors, then developing a shared repertoire of skills. Companies will be invited to validate and place their fields of competence as well as their position in the sector. Not to mention the backing of the initiatives of the industry partnership, which has to be effective, through the clear explanations of their actions. In the short-term, between the research organisations and the small and medium-sized businesses for assuring efficient communication; among the small and medium-sized businesses of the same sector who are positioned in a

complementary way in the subsequent field; and finally, among the small and medium-sized businesses possessing complementary professional skills.

### **Partners, and a plan of action in progress**

Launched at the end of 2003, this plan has already resulted in the characterization of over 150 companies established regionally. Certain crosswise actions, such as the meetings that have taken place between CREMSI and the Water Board, have already well-succeeded in several partnership projects for the development of innovative products addressing new needs. Right now other gatherings like this are underway, with actors in a wide variety of consumer sectors (medical, control and regulation). It also means encouraging the expansion of the market for the small and medium-sized businesses through the creation of a regional image of competence, all in close collaboration with the patron establishments. This especially allows for easy actor participation in major events like professional symposiums or conferences, taking place regionally and nationally. It's already succeeding with the association established between CREMSI, Méditerranée Technologies, Hautes-Alpes Développement and Micropolis. Together they co-organised the Forum Objets Communicants, Prospective et Création de Valeur, Espace Partenariats ("Partnership Forum on Communicating Subject Matter, Futurology and Value-Creation") which shall take place this September 28th in Gap (the "gentle" capital, in the county of Haute Alps). This event will bring the PACA and Rhône Alps regions' centres together in a common approach of exploring new uses for communicating subject matter, guided with the expertise of the CEA-LETI and the sector's most active entrepreneurs. The forum will also be an exchange point for participating companies to display their partnership research, identify actors interested in their projects, and establish foundations for collaborative projects.

The good initiatives always being rewarded, there's no doubt that this one will be acclaimed by the companies concerned, and that the initiative on September 28th will be a success that shall support the association's four partners. Their collective reflection proves that, despite the revitalisation and the leadership, our area strongly holds in this sector. Everyone is aware that we must continue our efforts and intensify the ambitions, to ensure that the region will continue to inject enough enthusiasm into our companies to help secure the future of this sector.

\* Source of figures: the Regional Mission Source of Economic Development

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