

Gallium Arsenide in Europe - a quiet revolution

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Abstract

The GaAs Industry in Europe is undergoing change. The EUROGaAs initiative has been launched which seeks to improve the competitiveness of the European microwave industry and make it better able to counter the relentless attack from Japanese and North American vendors. This paper will describe the EUROGaAs initiative in detail.

The Euro GaAs initiative

In an Italian Government office building in Rome, not far from the Olympic Stadium a meeting was held in March 1992 that future historians may say changed the face of gallium arsenide in Europe. The meeting took place between the seven largest gallium arsenide component manufacturers in Europe and representatives of the governments of the UK, Italy, France, Germany and The Netherlands and the European Commission. At this meeting the seeds were set for a harmonised, co-operative effort to improve the competitiveness of European GaAs - the EUROGaAs Initiative was born. By June 1992 an umbrella project called EUROGaAs was accepted as a EUREKA project (EU807). Soon after, a document outlining the aims of EUROGaAs was submitted to the Member States attending the Rome meeting and to the European Commission. This outlined the perceived impediments to successful component exploitation in the world markets that needed to be immediately addressed, together with an outline plan of actions reaching to the year 2000. This document also included market predictions for GaAs components sales to the year 1997. These showed a growth in sales of at least 20% until the next century with world wide sales reaching \$4Bn by the year 2000. It also showed that Europe's component makers had only 5% or so of the world market but were capable of much more.

The Three Phase Programme

The document outlined a three phase programme to improve the competitiveness of European GaAs. In the first phase EUROGaAs proposed to conduct a survey of European component makers and USERS and use the information to build up a strategic plan for the future. The second phase of the plan

was to address the major impediments to commercial exploitation of the GaAs technology.

At the very first Rome meeting the Seven submitted to the Government and EC members present a list of topics they believed needed to be addressed to improve their competitiveness in the world market place. This included:

- (a) Substrate and epitaxial material
- (b) Packaging
- (c) Production science
- (d) Education and training
- (e) CAD
- (f) Equipment
- (g) Second sourcing

These topics formed the basis of two proposals submitted to the Commission under the ESPRIT III call for proposals. The proposals called MUSIC, European GaAs Manufacturing Science and Infrastructure Programme and EUMICAD, were technically approved but not funded by the Commission. The Commission needed to be convinced that the European GaAs industry was committed to becoming a major international force and that the markets were real markets - in short they had to be convinced that any money they spent on Gallium Arsenide would not be wasted and would lead to exploitable markets.

The first drafts of the Framework IV outline work plan contained no mention of GaAs and mid 1993 until December 1993 was a tense time for GaAs in Europe - much lobbying and many substantiating documents were passed to the Commission dealing with company commitment to GaAs, moneys spend on facilities, R & D and manufacturing by the Seven, market information from reputable market prediction companies etc. The solidarity of the EUROGaAs consortium was vital at this time - each member co-operated in a timely manner impressing the Commission with the cohesiveness of the organisation. Such was the persuasiveness of the arguments that by the end of 1993 the credibility of EUROGaAs had been demonstrated and GaAs had been firmly established in the current draft working document on Framework Programme IV (FPIV) Specific Programmes dated 6th October, 1993 (Doc. ref: Com (93) 459 final).

The third phase of the plan is to seek support from the Commission (Framework IV) and National Governments (EUREKA) to ensure that the findings of the Phase 1 surveys are carried out and that the European Industry obtains a substantially larger share of the market than it presently enjoys.

Progress to Date

The first phase is newly complete and a presentation of the preliminary findings has already been made to the Microelectronic Unit within the Commission. These, it is hoped, will form the basis of the work programme within Framework IV. A written report on the results of the survey will be given to the Commission in April 1994.

It has been previously mentioned in this paper that the second phase projects were rejected by the Commission. It does now seem certain that funding for a partial programme on some of the topic areas will be forthcoming and will form part of an EC 'Bridging' initiative.

The Future

The first 'battle' is won but the 'war' is far from being over! A work plan in support of GaAs has now to be written and this plan has to be applications (USER) driven. It is important, therefore, that the whole of European Industry pulls together - USERS, Component makers, Academia and SMEs all have a part to play in the projects of Framework IV, especially the USERS, big and small. Properly co-ordinated, and under the EUROGaAs label, the whole of European Industry can benefit from the unique opportunity that the Framework IV programme can provide.

What started off as a quiet, low key affair is steadily building momentum and managed properly will lead to Europe's Microwave and Millimetre wave industry becoming truly competitive with that of Japan and the US.