

Hope for 1st Silicon

A loss-making Kuching wafer fabrication company turns to a foreign partner and a different business model. ■ By S C Chan

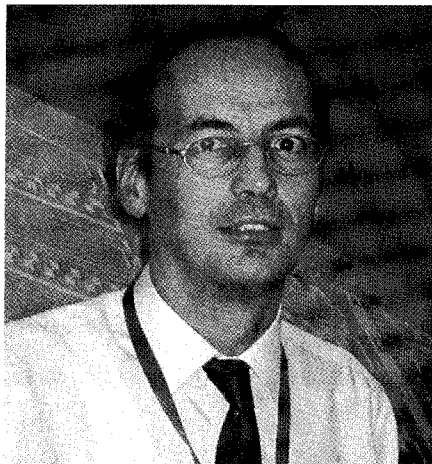
THE Sarawak Government has finally found a way out of its costly venture into the highly cyclical wafer fabrication business.

But far from pulling out, it has merged its 98%-owned Kuching-based wafer foundry, operating under 1st Silicon (M) Sdn Bhd, with German-controlled X-FAB Semiconductor Foundries AG. The latter is a leading global analog/mixed-signal foundry group manufacturing wafers for analog-digital integrated circuits (mixed signals ICs).

The merger, inked in September 2006, led to a joint-venture company known as the X-FAB Silicon Foundries NV located in Tessenderlo, Belgium, in which XTrion NV, also based in Belgium, holds approximately 58% equity and the Sarawak Government, through State Financial Secretary Inc, about 35%.

With the injection of the Kuching assets (land/building/machinery) into the group (1st Silicon's liabilities, estimated at RM3 billion, representing losses over previous years' operations, remain with the State Government), X-FAB now has four wafer facilities worldwide – in Germany, Britain, the United States and Malaysia – with a total capacity of 700,000 200mm equivalent wafers per year, offering customers production technologies ranging from 1.0 to 0.13 micrometer.

X-FAB Silicon Foundries' executive vice-president Roger Diels, who is also the chief executive officer of its Malaysian subsidiary X-FAB Sarawak Sdn Bhd



Diels: The group's mission is to strengthen its position as the world's leading independent analog/mixed signal foundry

(formerly 1st Silicon (M) Sdn Bhd), tells **Malaysian Business**: '1st Silicon was in the market for sale. We had a look at it. We saw at once the synergy with ours. The rest is history.'

The State Government had been holding a 'hot potato'. Loss estimates were put at more than RM3 billion and 1st Silicon's earlier foreign managers were pressing the owners to sink in more money, arguing that the wafer fab business called for 'a bold investment' over a long period of time.

The state simply couldn't do that without having to use its reserves and borrowing more. Besides, it was under increasing pressure, especially from the opposition parties, to reveal the extent of the losses since the company started operations in

2000. To the end it refused to do so, except to say it was an investment good for the future of Sarawak.

Further, 1st Silicon's losses did not include losses in an earlier investment in the now-defunct Inter-Connect, run by a group of potential American investors, that was to start the wafer fab. The initial losses were said to be in the region of several hundred million ringgit. Again the exact amount was never disclosed.

X-FAB's arrival on the scene was, therefore, not a moment too soon and at least gives hope, in the mid or long-term, for the state to see some recovery of the losses now estimated to be in the region of more than RM3 billion, including the cost related to Inter-Connect.

Industry experts and economists familiar with the fab business concur that the whole episode has been more than just a lesson in dollars and cents for Sarawak. It is also about the importance of experience, they say.

At a recent press briefing at the X-FAB facility in Sama Jaya Free Industrial Zone on the outskirts of Kuching, Diels, who has more than 20 years' experience in the semiconductor industry, announced that the company was going to adopt a new business model at the facility and would concentrate on analog production technologies during a three-year transition period.

This means moving away from the fast-moving digital and flash market that requires periodic upgrading of costly

machinery to cope with demand. Why? 'Because the world is analog,' says Diels, adding that demand for analog is increasing.

He estimates that the semiconductor industry is 25% driven by analog. Concentrating on analog means the existing expensive equipment already in place at the Sama Jaya facility will be good at least for the next 10 years, without the need for shareholders to put in money to replace or upgrade it.

The company had announced soon after the merger that its first modular 0.18 micrometer analog/mixed signal CMOS process and design kit – the XCo18 Master Kit – would be available from its Malaysian facility by December last year. This would be implemented for use with technology from Cadence Design Systems Inc to support state-of-the-art design flows, giving engineers designing CMOS low-power applications a smooth and efficient path from design through physical implementation, and shorter design cycle times.

According to Diels, the X-FAB group's net profit for 2005 was US\$20 million. It is envisaged that once the latest add-on facility in Kuching goes completely into analog production, probably in three or

four years' time, and starts selling to targeted markets in Europe and the US, a sizeable portion of the group's turnover – and profits – will come from the Malaysian subsidiary, which employs nearly half of the group's 2,400-strong workforce. This is something the partners are all looking forward to.

X-FAB is already acknowledged in the global market as the analog/mixed-signal foundry experts, offering 'a clear alternative to the typical foundry services, by combining solid, specialised expertise in advanced analog and mixed-signal process technologies.' It manufactures wafers for automotive, industrial, consumer, medical and other applications on ultra-modern modular CMOS and BICMOS processes with technologies ranging from 1.0 to 0.13 um, and special BCB, SOI and MEMS long-lifetime processes.

Diels says the group's mission is to strengthen its position as the world's leading independent analog/mixed signal foundry by offering customers high-performance technologies, excellent technical support and fast, easy and flexible foundry access.

The civil engineering graduate specialising in microelectronics from

Belgium's University of Leuven can see clearly the benefits of the merger with 1st Silicon for the group. Firstly, he says, it provides X-FAB a truly global manufacturing base and complementary technology platforms, in particular with an extension of the analog/mixed signal roadmap down to 0.18 um and complementary customer base. Customers also gain through a broader range of available process technologies and expanded capacity for analog/mixed-signal technologies.

X-FAB Silicon Foundries NV chairman, Datu Ahmad Tarmizi Sulaiman, the State Financial Secretary, said when announcing the merger: 'It is an ideal partnership because it promotes healthy development for our high-tech foundry in Sarawak.'

Market analysts, however, interpret it more as the Sarawak Government finally 'seeing lights at the end of the tunnel' after a costly experiment, based almost totally on the use of its own funds but almost entirely on foreign managers, over the past many years.

When asked whether X-FAB might look at any other similar troubled facilities in this region, Diels responded somewhat jokingly: 'Who knows, we might be approached again!' **mb**

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