

## PAV providing solutions in the GSM world

As operators launch new data and messaging services, and continue to build out network infrastructures, operators need to focus on the customer needs, experiences and the applications which will generate future revenues. Users are significantly more sophisticated than when 2G first appeared and much more demanding in the quality of service they receive as a result. Operators are therefore dependant on the robustness of the infrastructure they use and the capacity and solidity of the bandwidth it generates.

Delivering this robustness and bandwidth to the last mile is a continuing challenge for the operators, the bandwidth bottleneck between the tower and the backbone continues to grow with emergence of new applications searching for additional revenues. Fibre, leased lines and microwave have been some of the traditional solutions to this bottleneck, each of these offering unique pros and cons. However in many cases a combination of economics, availability and radio congestion has left operators looking for an alternative solution.

The emergence of Free Space Optics (FSO), coupled with lower equipment costs, has changed FSO from a "last resort" to a medium of choice. Today, FSO solutions are cheaper to deploy and maintain than wireline solutions with their high cable-laying costs and the possibility of cable damage. They can also be deployed far quicker, giving operators a key competitive advantage.

PAV has been one of the key players in bringing about this change – continuing a tradition of FSO innovation dating back to the origins of FSO within military and defence applications. Using our unrivalled experience and expertise, we have developed PAV's technology, ensuring recent advances in FSO and laser technology are incorporated into the product design

PAV's FSO technology provides a solution in trunk and cellular backhaul networks providing service with wireline quality mainly if geographical obstacles have to be overcome, speed of deployment is an issue and installing fibre is too expensive. These advantages can also be used to provide last mile access with a similar quality of service especially for new operators in the frame of liberalisation and deregulation.

PAV's technology offers the most comprehensive set of FSO solutions available, providing: -

- Lower Start-up Costs
- Highly modular and scalable architecture
- Highly cost-efficient and economic
- Speed and ease of deployment
- High quality and reliable services
- Expandable transmission capacity

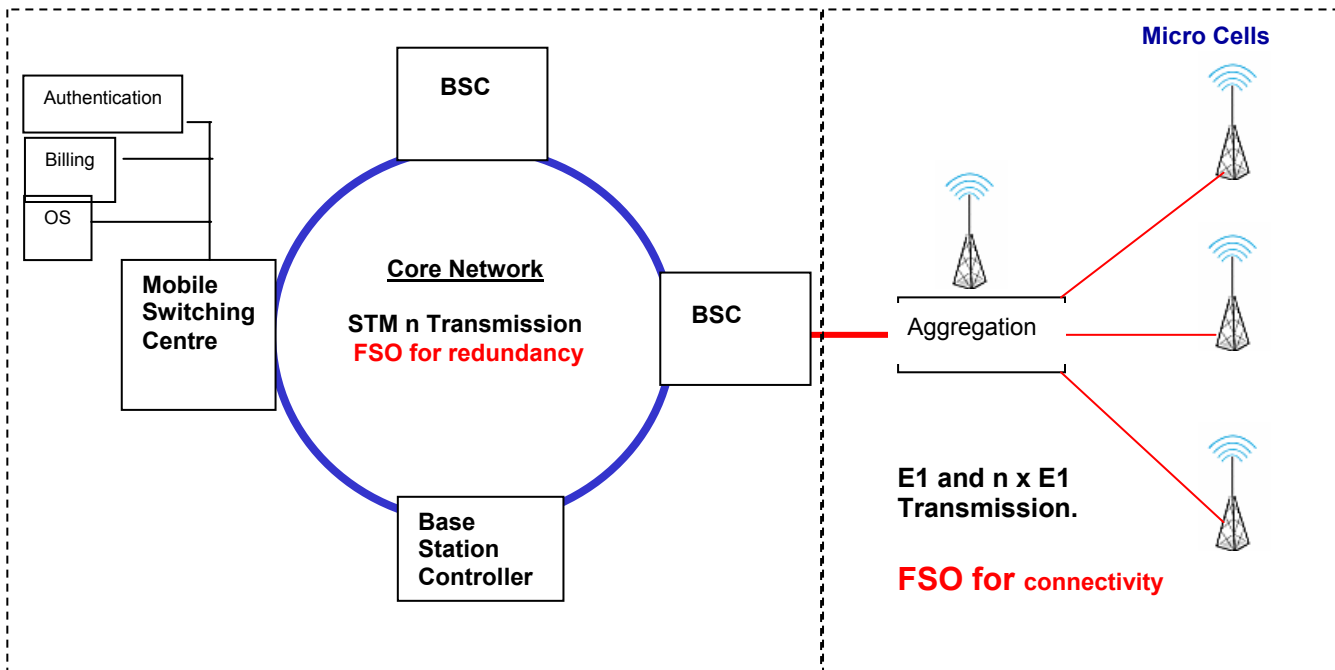
With PAV's complete product suite, network operators and service providers can rapidly satisfy customer demand for advanced services.

PAV with FSO technology have been supplying high bandwidth/short distance solutions within the GSM operators for many years now. The robustness and reliability of the PAV technology has enabled PAV, over the years, to build an impressive client list of GSM operators utilising their technology. With a product range scaleable from E1, through multiple 4E1-63E1 and onto STM1 and STM4, PAV have the complete product suite to meet the ever increasing demands of the GSM operators. A skilled and experienced Research and Development team of engineers are constantly and consistently ensuring PAV technology is at the forefront of FSO. Providing greater reliability and availability ensures PAV's FSO technology is delivering flexible bandwidth where the users demand.

PAV have consistently been able to penetrate new markets, with sales into the GSM and Cellular market place being especially strong. PAV's installed base with 1000's of links in the GSM Mobile World is testament to the reliability of the product and the availability that can be achieved from the technology. Some typical examples of PAV's GSM customers are provided below, utilising FSO as a tool within micro - cell deployment:

- Mobinil, Egypt
- China Mobile, China
- Mobilink, Pakistan
- Vodacom, South Africa
- OmniTel, Italy
- China Telecom, China
- Omnatel
- Safaricom, Kenya
- Idea Cellular, India
- TDCA, Afghanistan
- DishNet, India
- Kencell, Kenya
- Ta Ta Teleservices, India
- Click, Egypt
- Mobistar, Belgium
- Jaztel, Spain
- Djezzy Orascom, Algeria
- Batelco, Bahrain
- Wataniya, Kuwait
- BelgiCom, Belgium
- Spice Telecom, India
- MTC, Kuwait

### **Back-haul in 2G/3G Networks**



In the Cellular and GSM environment PAV has a very comprehensive management platform provided by the Nimbus management package. Up to 2400 links can be monitored from a central location. Management is provided out of band and can be interfaced into any standard GSM microwave system

At PAV we are helping customers lead the revolutionary change in communications. We come to the playing field equipped with experience, expertise and a radical new vision. PAV prides itself on a proven record of innovation and technological breakthroughs.

Every enterprise aspires to understand its customers. At PAV, we aspire to more. We give our customers the communication networks, connectivity and services they need to transform their businesses. With offices in countries around the world, including the United Kingdom, Africa, Asia, and India, PAV are now poised as a major global provider of FSO technology solutions.