Foreword

Thank You All for the Success of MEXA-7000

Juichi SAITO
Vice President
HORIBA, Ltd.

The MEXA-ONE, our new Motor Exhaust Gas Analyzer launched in 2012, has become our core product superseding the MEXA-7000 with a surge in the number of shipments since the beginning of 2014. The MEXA-7000 had evolved continually over the nineteen years since its introduction in 1995 to respond to the significant changes that took place in emission regulations, types of fuel and new technology in engine combustion including exhaust after-treatment systems. Responding to the needs and requests from the users all over the world, the MEXA-7000 was finally advanced to version 4 which was introduced at the end of 2011 and continues to extend its record as a long-lived product. The total number of units shipped has reached more than 5,500 and the majority of them are still in use. They contribute to improve the efficiency of engine testing, combustion development and the reduction of exhaust emissions on a worldwide basis including Africa. The total number of MEXA-9000s, the predecessor of the MEXA-7000, shipped over fifteen years was 1,500. Comparing the figures between the two, I think you agree that 5,500 units of MEXA-7000 is an impressive number.

The concept development of MEXA-7000 started in the summer of 1993 with the aim to down-size and modularize the entire system including the analyzers and

sampling units. Another important target was an improvement in the efficiency of the MEXA operation by using digital communication technologies including the latest CPU, signal processing and interfaces. At that time, due to the exponential increase of PCs in use with their remarkable improvements in performance, not only host computers but also exhaust gas measuring systems were rapidly being digitized. It was the turning point in the development of analytical systems to shift from our own processing systems with microcomputers to commercial PCs, which were advancing more rapidly, to obtain higher processing performance. The use of commercial PCs raised concerns in the early stage because we were unsure about their reliability and platform stability due to frequent updates. However we decided to adopt them for MEXA-7000, leaving the processing speed improvement to the PC field. At first, we used the UNIX based LynxOS which was a Real-Time OS that was more stable than Windows. After that, the system was updated to LinuxOS so that we could utilize new peripheral devices sooner.

At that time, the mainstream data transfer interfaces were RS-232C · 422 · 485, and IEEE488 (GPIB). Our young engineers in the concept development team suggested Ethernet, which was uncommon around that time, and insisted that Ethernet would be the interface in the future. The type of interface had always been a problem for MEXA-9000, so choosing an interface for MEXA-7000 was a crucial decision on specifications. Looking back, it was a life or death choice; either betting on the young engineers' sense or going for a conservative mainstream interface like the "Recommended Standard" RS serial. Eventually, we chose the Ethernet to send and receive data which quickly advanced from 10BASE2 to 10BASE-T. Combined with PC performance that was becoming more and more powerful, the MEXA-7000 made remarkable progress over its life, while maintaining core design elements including hardware and communication interfaces which are familiar for the users. For our new model MEXA-ONE, a commercial PC and the latest 100BASE-TX were naturally chosen. I understand the reasons why MEXA-7000 has maintained its position in the market for such a long time in an environment where digital technology develops rapidly is a combination of users liking the product and the young engineers' passion. MEXA-7000 is still in the field and will be a supporting tool for global engine developments along with MEXA-ONE. We appreciate very much the contribution of the global users as well as those within the HORIBA Group that have made the MEXA-7000 to grow into such a successful product.