

Issue 01/2013

Highlights:

**Premiere at Testing Expo –
HORIBA introduces CVS-ONE**

HORIBA celebrates 60th Anniversary



Dear readers,

We are delighted to be celebrating HORIBA Limited's 60th Anniversary throughout 2013. With a wealth of knowledge that has been acquired over these past 60 years and the experiences of today's market, we feel HORIBA technologies are best placed to face the challenges of the future.

It feels like the increasing number of new trends in the automotive industry are equally matched by the expectations and demands of the automotive testing requirements. As we all experience the effects of accelerating programs and times, the importance of alternative powertrains is rising alongside emission regulations. Consequently the demands for state-of-the-art products and application based testing solutions are ever increasing.

As a total solution provider HORIBA's customer focused strategy ensures a close connection to our customer base and strengthens our relationships based on mutual exchange. We look forward to welcoming you at the Annual Testing Expo Europe, Stuttgart, in June, for lively and informative discussions about current and future trends.

Please enjoy your most recent issue of ESPRIT.

Best Wishes, Jonathan Eaton
Vice President Business Development & Marketing
Automotive Test Systems



HORIBA with a premiere at the Testing Expo Europe 2013

HORIBA will introduce new constant volume sampler CVS-ONE

The new constant volume sampler CVS-ONE has its European premiere at Testing Expo



At the 15th Automotive Testing Expo Europe in Stuttgart, Germany, HORIBA will present its latest innovations as well as well-proven products. From 4th to 6th June HORIBA will launch the constant volume sampler, CVS-ONE. Located in Hall 1, booth number 1512, HORIBA experts will inform visitors and existing customers about the company's product portfolio and will offer a platform for many inspiring discussions.

Testing Expo – a perfect basis for product innovations

In Stuttgart, HORIBA will present its new constant volume sampler, CVS-ONE. This is the latest advancement in the measurement of diluted mass emissions from vehicles and engines and features a compact and user-friendly design, whilst maintaining the high accuracy renowned from HORIBA technology. Due to the considerably downsized hardware, the footprint has been reduced for enabling a more flexible test cell layout. In combination with HORIBA's motor exhaust gas analyzer MEXA-ONE, the new sampler allows the measurement of extremely low emission levels

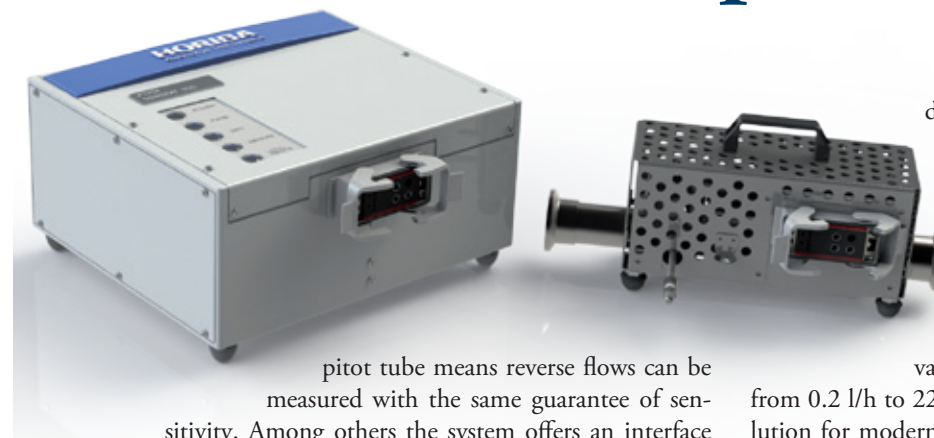
required, for example, by SULEV and Euro 6. In addition, the CVS-ONE comes with the newly developed integrated operating platform, HORIBA ONE PLATFORM, suitable for certification tests and fuel consumption measurement. With its intuitive, ergonomic design the newly developed software platform makes system operation easier. Another characteristic feature of the HORIBA ONE PLATFORM is that from one single display system control and a complete system view of other measurement devices are available.

HORIBA has already received the AEI Tech Award for CVS-ONE on the SAE World Congress 2013. With the award the jury of Automotive Engineering International (AEI) editors honour technologies that will give significant impulses to the future automotive industry. Thus the history of the successful developments of emission measurement technology continues, after having already been awarded for MEXA-1400QL-NX in 2012.

Further to the portfolio additions, HORIBA will display the latest Pitot Tube Flow Meter, PTFM-1000 V2, which is a standalone interface for measuring exhaust gas flow rate of combustion engines suitable for diesel, gasoline and specialist engines. The system uses the tried-and-tested pitot tube principle with high-frequency transducers to accurately measure highly pulsating exhaust flows with a sampling rate of 1 kHz. This rapid capture rate ensures that any pulsations or exotic behaviour in an engine are measured, and the unique design of the PTFM



Last year's booth was bustling with activity



pitot tube means reverse flows can be measured with the same guarantee of sensitivity. Among others the system offers an interface that provides a real-time display of exhaust flow well within the accuracy requirements of ISO 16183 and furthermore automatically detects the type of tube attached to it, and is instantly ready to use without any additional input from the operator.

Last but not least, the DYNAS₄, the successor of DYNAS₃ will also be presented at the trade fair. DYNAS₄ is an AC machine for engine testing purposes. Nearly every application in the field of engine testing can be performed on a test stand with DYNAS₄.

HORIBA's success stories

In addition to the product innovations, the exhibition will also focus on HORIBA's approved technology. Launched at last year's Testing Expo Europe, MEXA-ONE, the industry standard in analytical system technology, will also be presented at this year's exhibition. Based on HORIBA's past years of experience in motor exhaust gas analysis, MEXA-ONE combines increased test efficiency for a wide range of application with low maintenance costs. Thus, the system provides advantages for customer and environment in equal measure by savings, realized through reduced operational costs with a key aspect on reducing power consumptions and facility requirements. The supporting role of MEXA-ONE in the field of emissions measurement solutions has also been recognized by the Automotive Testing Technology International (ATTI) magazine. A jury of automotive test experts and industry journalists elected MEXA-ONE out of a number of other applicants as the winner of the ATTI award "Hardware Innovation of the Year".

Visitors can also take a look at the innovative MEXA-1400QL-NX motor exhaust gas analyzer that simultaneously measures four nitrogen components (NO, NO₂, NH₃, N₂O).

Besides this, HORIBA's FQ-2100DP Fuel Flow Meter offers a Flex Fuel compatible system. One notable feature of the system is its wide range of applicable me-

dia: it can be used for all established liquid fuels including biodiesel. It provides accurate measuring results at low fuel consumptions of small-sized engines as well as at maximum consumption rates of large-sized engines. The FQ-2100DP Fuel Flow Meter covers various fuel types and fuel flow rates

from 0.2 l/h to 220 l/h and is therefore a versatile solution for modern engine testing. All components of the FQ-2100DP are mounted inside a closed housing which is installed on a flexible assembly frame, so the measuring unit comes with a compact and user-friendly design. In combination with the servo-active positive displacement counter DP220, the FQ-2100DP provides measurement precision especially in the region of minimal fuel flow. Additionally to already given attainments even more optional benefits like a fast data exchange with 100 Hz, a plausibility check of the measuring system and a transfer standard to check the calibrated sensors are also offered.

At the event, HORIBA will also display its products in the fields of test automation with STARS and VETS-ONE. STARS is an integrated automation, data acquisition and control system platform, providing a broad range of functionality in a single, powerful environment. VETS-ONE is a vehicle emission test system that allows the design and execution of testing processes. It combines results of various single emission tests and evaluates the results against limits.

After the great success in recent years we are proud to present our extensive product portfolio at the Testing Expo 2013. HORIBA will be delighted to have exciting and in-depth talks with all our visitors. As in past years, there will be a boat tour on the river Neckar for customers and HORIBARIANS, this has come to be a traditional event for HORIBA during this special week in June. We are looking forward to seeing you at the Testing Expo 2013!



Another novelty is the latest Pitot Tube Flow Meter PTFM-1000 V2

HORIBA's MEXA-1400QL-NX motor exhaust gas analyzer simultaneously measures four nitrogen components

HORIBA bids David Sneath farewell on his retirement

HORIBA UK expresses its gratitude to David Sneath for the long lasting and successful collaboration



On April 24th, 2013, HORIBA UK Limited hosted a special guest. David Sneath has been a long-serving employee at Ford Dunton UK for 45 years and has worked with HORIBA closely for 35 years. David was working at Ford during the installation periods of the 1st MEXA; the -8000 series. He was also present for the introductions of the MEXA-9000 and MEXA-7000 series. In January of this year David retired from Ford. To mark this momentous occasion HORIBA prepared a special commemorative presentation to mark Mr. Sneath's association as a customer to the HORIBA

Group and advocate of the MEXA technology. He was presented with an NDIR model, an exact replica of that found in our analyzers; and a CAD drawing, on a large canvas of the completed B and D Rolls Emissions Chassis Dynamometer Facility, recently installed by HORIBA at Ford Dunton Technical Centre, in England. The presentations were accompanied by a signed card from Top Management of HORIBA; Mr. Atsushi Horiba, Dr. Kozo Ishida, Mr. Juichi Saito, Dr. Masayuki Adachi, Mr. Takashi Nagano, and Mr. Hiroshi Nakamura.

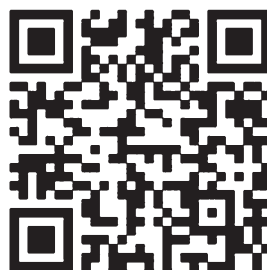
HORIBA CONCEPT Conference 2013 in Dresden

HORIBA and TU Dresden invite you to join discussions about future trends

Due to the great reception of the first conference, HORIBA is organising its second Conference of Combustion Emissions Particulates and Testing (CONCEPT) which will take place on October 14th and 15th in Dresden, Germany. In cooperation with the Chair for Automotive Engineering of the Technical University (TU) Dresden, the conference provides a platform of discussions for experts, considering the current development of alternative powertrains and thus the increasing requirements on testing systems. In the focus of interest are questions on future function trends in vehicles, their consequences for emissions, test stand and measurement technology as well as considering how simulation, dynamometer tests and road test have to be combined to reach the optimal result of development and fuse. Further questions such as how the progress affects the configuration of methods and cutting points among themselves will be discussed in-depth.

The venue for the conference will be the Steigenberger Hotel "Hotel de Saxe". As a popular place for the exchange of ideas this felt like an appropriate location. Under the direction of Prof. Dr. sc. hum. Marcus Rieker (HORIBA) and Prof. Dr. Ing. Günther Prokop (TU Dresden), presentations will be given by speakers from legislation, the industry as well as universities.

For more information and to access the application form, please visit our homepage <http://www.horiba.com/automotive-test-systems>. The charge fee for the conference is 520 € per participant or 150 € per student. By applying before July 31st 2013 an early bird fee of 470 € per participant or 100 € per student will be offered.



MEXA-ONE successfully launched in India

After two successful events in Europe and the United States of America in 2012, HORIBA continued the launch tour of the new Motor Exhaust Gas Analyzer MEXA-ONE. The much anticipated event took place at Hotel Westin in Pune, India, on January 8th, 2013, the eve of the SIAT (Symposium on International Automotive Technology) Expo 2013, in which HORIBA India proudly participated. With 70 exclusively selected representatives of well-respected Indian based customers like ARAI, Maruti and Mahindra as well as top senior management from HORIBA's head office in Japan and HORIBA Europe, several employees from HORIBA India celebrated the company's proud milestone in a fun and informal atmosphere.

Impressive technology

After a dramatic light show presentation of the MEXA-ONE in a mystically dimmed conference room, culminating in a major confetti blast, Mr. Juichi Saito, Director of the Board, and Dr. Jai Hakhu, President of the Americas, addressed the audience with two exciting speeches. Afterwards, Dr. Hiroshi Nakamura, Global Manager, R&D Automotive Test Systems, gave a technical presentation on the groundbreaking new MEXA-ONE system to some very im-

pressed guests. The pioneering technology gains from HORIBA's 50 years of experience in motor exhaust gas analysis and features new measurement technologies to achieve faster response and calibration times in analyzing raw exhaust, dilute exhaust, and EGR (Exhaust Gas Recirculation).

Festive supporting program

Earlier the launch had been symbolically opened by candle lighting in order to create a good omen for the evening and all upcoming events. In accordance with Indian culture this act was followed by the colorful Ganeshvandana; a traditional dance to honor the Hindu God Ganesha, who is known to be the patron of arts and science and the Lord of Beginnings and Obstacles. Another highlight of the evening was the Drum Café, a cheerful team building game in which everyone on stage and in the audience participated in drumming. Within minutes the conference hall turned into a loud and fun place where strangers engaged and enjoyed one another's company. Yet another launching event was celebrated during the Automotive Testing Expo Korea 2013 that took place from March 18th, 2013 until March 20th, 2013 in Seoul, Korea.

Dr. Hiroshi Nakamura, Global Manager R&D Automotive Test Systems, explains the functionality of the MEXA-ONE



Enthusiastic guests dance and drum during the Drum Café team building game

HORIBA's 60th Anniversary – taking a new step upward



Dr. Masao Horiba at his commemorative speech

In 2013, HORIBA celebrates its 60th anniversary. For that reason, employees from all over the world were invited to the headquarter office in Kyoto in January. They participated in an event to celebrate the company as well as the employees. According to the traditional Chinese calendar, the 60th birthday for a hu-



Atsushi Horiba, Chairman, President and CEO of HORIBA Ltd., receives the first HORIBARIAN Book

man being signifies the start of a new cycle in Japanese culture. For HORIBA, this could be the year to take “one new step upward”.

For HORIBARIANs by HORIBARIANs

Sho Nakayama, leader of the 60th anniversary project, formally announced the start of the long-await-

ed ceremony. He cordially welcomed around 2,400 Japanese Horibarians and 74 foreign colleagues from all over the world at the Kyoto International Conference Hall. The whole ceremony weekend was conceived as a global exchange. For instance, the international colleagues were accommodated at Japanese HORIBARIANs to learn more about the cultural practices and the Japanese way of life. Thus cultural ties could kindly be deepened additionally to the actual anniversary event.

The ceremony itself was carried out under the slogan “for HORIBARIANs by HORIBARIANs” to unite employees throughout the world. It was meant to mark a new departure as Horibarians pass down the “TASUKI”, the sash worn in an ekiden (long distance relay race), on which Horibarians wrote their hopes and wishes. Hence, the “TASUKI” is soaked in “Omoi”, emotional feelings of 60 years of HORIBA. During the ceremony, congratulatory messages were broadcasted live from overseas branches. Each one was unique and represented the country it came from.

60 years of HORIBA

Chairman, President and CEO Atsushi Horiba emphasized the joyful nature of the event in his speech. He gave the audience an overview of the company's development over the past ten years: “On our 50th anniversary in 2003, we launched into full-blown



globalization so that HORIBA could achieve further growth in the 21st century under the corporate slogan of ‘Explore the Future’.” In fact, in the ten years between 2002 and 2012, HORIBA has achieved brilliant results: for example, sales, earnings and market value of the company have improved. In the early beginning of the 21st century, HORIBA proclaimed the aim to “become an attractive company” and that the “HORIBA Group is One Company” which considerably accelerated the globalization. Since the traditional Chinese calendar considers the 60th birthday for a human being as a start of a new cycle, Atsushi Horiba believes that for the company this is the year to take “one new step upward”.

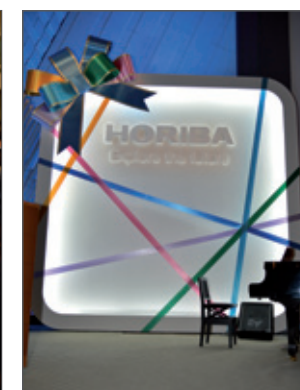
A spirit of joy and fun

His father and company founder Dr. Masao Horiba thanked the HORIBARIANs for their commitment and loyalty to the company highlighting that is was their daily work that makes HORIBA a success. He also thanked the past generations of HORIBARIANs who put in so much effort to overcome difficulties when HORIBA was founded. Dr. Horiba gave a short abstract about the history of HORIBA starting with its foundation in 1945. HORIBA developed from a small venture with only eight employees in the first four years to a company with more than 5,500 employees. In the early 1950s, he started mass-production of pH meters;

the present company was registered in 1953. Epoch-making products such as HORIBA's pH meter, infrared analyzer and radiation detector, are still mainline products. Today HORIBA has 80 Percent of the world market for instruments that measure and analyze automobile exhaust gas, and also make instruments for environmental, medical and semiconductor manufacturing processes. When Masao Horiba was appointed as chairman he decided “Omoshiro Okashiku”, which can be translated as “Joy and Fun”, to be the company's motto. The 60th anniversary will be the day of a new start, while still preserving the great traditions of HORIBA, with a spirit of “Joy and Fun”!

Different cultures, one company

After the award-giving ceremony regarding the HORIBA Presidential Awards, the One Company Award and the speeches of Atsushi and Masao Horiba the party moved to a different venue for lunch where global hot pots were served following congratulatory speeches and toasts. The hot pots, each containing food options from a different culture, symbolized HORIBA's global diversity. Afterwards, five of the 60th anniversary project working groups made presentations to show their achievement. The affecting finale of the event included a group chorus performing the One Company Song “Joy and Fun”, a joint project of HORIBARIANs around the world.



Success story HORIBA sells 50th Fuel Flow Meter



Further advantages of the device besides its in situ statistical examination of real measurement data are integrated plausibility tests and calibration checks. The FQ-2100DP is based upon the measurement principle of the well-proven servo driven volumetric displacement pump and provides utmost measurement accuracy covering the entire measurement range from 0.2 l/h to 220 l/h. Consequently, the design and range of components allows the application with engines of different sizes and injection principles without the need of modifications at the measurement system. The adjustable temperature and pressure range facilitates an easy connection of the FQ-2100DP with engine, vehicle, and powertrain testing applications in the fields of R&D, certification, quality management, and endurance testing as well as for production purposes. Its various features make the Fuel Flow Meter a basic and multipurpose tool for the development and production of combustion engines.

In early 2013, HORIBA produced and shipped its 50th Fuel Flow Meter FQ-2100DP, which has been in the market since 2011. Thanks to its intuitive usability, easy connectivity to host systems, highest accuracy, and availability due to the application of globally proven and tested standard components, the Fuel Flow Meter FQ-2100DP convinces a continuously growing number of HORIBA customers.

The market success of the FQ-2100DP has been celebrated with a team breakfast in Darmstadt where Jörg Brunke, Managing Director of the mechatronics sector of HORIBA Europe, expressed his gratitude to the team.

Race against cancer

As reported in the previous ESPRIT issue, HORIBA Automotive Test Systems and Semiconductor segments sponsored the team from the Dutch company Trymax at the ScanCoveyTrial 2013. During this motorsports event in January, the teams covered a distance of roughly 7000 kilometres through ten European countries up to the North Cape within nine days of racing.

Being challenged by periods of driving continuously for 30 hours, both Trymax drivers Leo Meijer and Ludo Vandenberk have achieved impressive results. Vandenberk finished in second place. Both drivers stated afterwards that they "had a fantastic adventure" competing in the race and would like to thank HORIBA for supporting their team.

Nevertheless, the event is not only a great experience for the drivers but also a beneficial project; the organizers donate

10 percent of all registration fees to KWF Kankerbestrijding, a Dutch organisation which spends most of its budget on financing cancer research and patient support programmes.



As a cross-segment activity, HORIBA sponsored Trymax team is proud of its results in the ScanCoveyTrial

HORIBA Europe extends their presence



Mr. Fatih Taş, the first employee in Istanbul, was welcomed by HORIBA sales managers

In March 2013, the new HORIBA Europe Turkey Representative Office opened its doors in Istanbul. Located at the crossroads of Europe and Asia, Turkey offers a strong growing economy with a rising potential of new prospects.

The new office is situated on the Asian side of the Bosphorus strait in the district of Atasehir, Istanbul. This is where most of HORIBA's current Turkish customers are based. The "Flora Tower" building is found within a modern district and is clearly visible from many directions in Istanbul. The office is also easily accessible from Istanbul's two international airports. On the 25th floor, the HORIBA office encompasses approximately 90 square meters including a meeting room.

Planned Expansion of Services

Mr. Fatih Taş began the HORIBA Turkey headcount

as the first employee to be based in Istanbul. The office is focused on customers such as universities and other key clients in the automotive industry which are generally organized and grouped under TYSAD (Tasit Araclari Yan Sanyicileri Dernegi), the Association of Automotive Parts & Component Manufacturers, and OSD (Otomotive Sanayii Dernegi); the Automotive Manufacturers Association. Both are key organizations for the co-operation with government and local as well as global OEMs.

The office is intended to function as a liaison office in order to strengthen the relations to existing clients like car manufacturers who have a strong presence in the area. Additionally, HORIBA Automotive Test Systems aims to expand its local customer base and, in the future, to extend its presence with regards to employees and services offered within Turkey.

Dynamic test - dynamic service



In an iron foundry Dietrich Bauer calibrates, together with other colleagues, a GIANT 6200 on which brake discs are tested for many automotive manufacturers

To guarantee customers the correct functionality of test benches and test equipment, HORIBA puts a strong focus on service. For example, a brake dynamometer must be recalibrated approximately every two years. On the GIANT 6200, different vehicle braking systems can be tested dynamically in accordance with international requirements: Stop-, towing- or drag braking in consideration of realistic loads and speeds. Since enormous forces come into effect during the daily tests, these regular maintenances are necessary for a safe and reliable test mode. HORIBA has many well-trained employees to adjust test benches with attention to every detail which takes place on the customer's site.

One of these employees is Dietrich Bauer who works at HORIBA in the commissioning department. Together with two colleagues he recently calibrated a brake dynamometer on-site. "It's always a great experience to bring such a comprehensive system to life," says the 34-year-old graduate engineer. "When you look at the range of applications of our systems

at the customer's site you become aware of the versatility of the products." Technical expertise and the concept of service correlate in his profession every day. "It is very diverse, to work for one of the leading companies in the industry and to be in close contact with clients," tells Bauer, who has been working for HORIBA since March 2013. "We often make long lasting contacts with each customer."

Additional value through information exchange

Close customer contact is beneficial for both sides. Only by using the products every day is valuable information provided for possible future product modifications. Therefore, direct feedback from customers is important for further developments. If suggestions are implemented in the form of future options and designs, the customer sees that his needs are taken seriously and he will feel vindicated in his choice of supplier. This includes a permanent and consistent service: "Clients are happy when someone is there to take care of everything. We are always fast on-site," says Bauer.

2012 Masao Horiba Awards



Group picture with the winners of the 2012 Masao Horiba Award

On October 17, 2012, HORIBA hosted the "2012 Masao Horiba Awards". The annual award is named after the founder of HORIBA, Masao Horiba, and has been established in 2003, to mark the 50th anniversary of HORIBA Ltd. The company was founded on October 17, 1945 and incorporated on January 26, 1953. HORIBA established this prize for young scientists in analytical science outside the group companies. It is intended to support researchers who are devoting themselves to research and development of innovative technology in analysis and measurement. The award values unique research and development with the findings and potential that deserves a global recognition. The field for the award is decided each year with a focus on the principles and elemental technologies fostered by HORIBA. The technological sector of last year's awards was "radiation measurement". HORIBA welcomed many reputable guests, including the Mayor of Kyoto City and members of the Japanese Diet as well as university professors.

Before the event took place, the day started with an in-house ceremony at HORIBA headquarters celebrating HORIBA's 67th year in business. Afterwards the winning research was introduced and certificates were given to the three award winners: Dr. Taiga Yamaya at National Institute of Radiological Sciences (NIRS), Dr. Toshiyuki Nakano at Nagoya University and Dr. Masanori Koshimizu at Tohoku University. In addition, Dr. Steven Pain at Oak Ridge National Laboratory was acknowledged with honorable mention.

In the afternoon, a formal seminar and ceremony were held at Shiran Kaikan Hall, Kyoto University. Impressive presentations were given by the three winners and Dr. Horiba's lecture provided valuable insights for the audience. To understand the significance of this year's target field exhibits were used to demonstrate the properties of radiation and a panel showed the long history of HORIBA's radiation measurement.

A major honor for HORIBA Darmstadt

Mr. Jochen Partsch, Mayor of Darmstadt, Germany, visited the HORIBA office in the Schenck Technology and Industry Park on Friday, April 19, 2013. Mr. Partsch aimed to get an initial impression of the company's development. After an informative talk the Mayor visited the production facility with Mr. Jörg Brunke, Managing Director of HORIBA Europe GmbH.

"We are very proud to welcome Mayor Partsch at our company," said Brunke. "The HORIBA facility in Darmstadt has developed positively over the last two years, which is why we see our future here."



Mr. Jochen Partsch, Mayor of Darmstadt, visited the HORIBA workshop including a transmission test stand

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