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## Welcome to our 14<sup>th</sup> Modeling Seminar edition of the Glass Service Newsletter

By Josef Chmelar  
President of Glass Service Group



Dear customers, partners and friends,

Welcome to our Glass Service (GS) newsletter. We would like to inform you of the latest GS changes and developments, resulting in new products that can be seen at our **14<sup>th</sup> International Seminar on Furnace Design - Operation & Process Simulation** (June 21 – 22, 2017 – Hotel Horal, Velke Karlovice, Czech Republic).

The Seminar is a very important bi-annual event for GS and our customers. The International Commission on Glass Technical Committee 21 (ICG TC21) meeting on furnace design and operation will also be held during this event. In fact, the entire conference is an initiative supported by ICG TC21.

You should contact Glass Service not only if you are looking for the most optimal glass melting concepts, but also if you look for advanced hardware that introduces the most efficiently and environment-friendly energy to your glass melt, such as burners from **FlammaTec** and electric boosting or bubblers from **FIC (UK) Limited**.

Expert System III is fulfilling segments of Industry 4.0 for the Glass Industry. Its functionality and operation are aided by our High Resolution Camera hardware and Image Processing software, both new sensors for the market-leading GS Expert System. Our 185 installations of GS Expert System II, III and 4.0 are evidence of industry acceptance of this dependable product.

We're looking forward to meeting you in person soon.

## New area sales manager for Latin America



By Petr Chmelar

Gabriel Noboa joined the Glass Service family in February 2017. He has many years of experience in glass and other related industries. Gabriel's experience in the glass industry extends to more than 20 years, particularly with the glass melting processes and combustion technology for all segments of the industry, including float, fiber, container, tableware, lighting, and other specialty glasses.

Gabriel works from Glass Service USA, Inc., as Senior Sales & Technical Support for Latin America. We wish Gabriel much success in this new position.

## New project manager for Russian and CIS market

By Petr Chmelar

In 2016, GS appointed Elena Petrova as Project Manager for our Russian speaking sales territory. Miroslav Kovac remains Area Sales Manager.

Elena is a chief technologist in glass container productions with more than 20 years of experience in the glass industry. She also has extensive experience in the operation of production, and in the design and construction of glass melting furnaces.



## GS supports ICG Steering and Phoenix Award Committee

By Petr Chmelar

Erik Muijsenberg was invited in 2016 to join the **International Commission on Glass** to become its new Steering committee member with the additional task to attract more young people to the ICG.  
[www.icglass.org](http://www.icglass.org)

Furthermore, Erik has accepted the invitation to become a member of the **Phoenix Award Committee**, which selects and honors an outstanding contributor to the glass industry each year. Glenn Neff, of our company, was a past chairman of the Phoenix Award Committee in 2009.

[www.phoenixawardcommittee.org](http://www.phoenixawardcommittee.org)



# Expert System ES III™ and ES 4.0™ lead the market with automatic furnace and forehearth control

By Robert Bodi

Many glass industry suppliers choose the GS Expert System ES III™ as the industry standard for advanced model-based expert control systems for melters and forehearths. GS is a leader in this field, with many years of experience and a variety of glass types.

SORG GmbH became a reseller of ES III™ in 2014, and in 2016 Advanced Control Solutions (ACSI) of Sylvania Ohio also joined with Glass Service and now is successfully implementing ES III™.

To date GS has installed 185 advanced control solutions, including the Expert System ES III™, in all types of glass plants worldwide.



GS ES III™ Reference map from 5/2017

New smart sensors, camera technology, and imaging processing of batch and tin bath area, will transform ES III™ into ES 4.0™, now ready for the future Industry 4.0.



## Gerresheimer Lohr installed *ES III™* on all forehearths

By Erik Muijsenberg

During the last quarter of 2016 Gerresheimer (GX) Lohr made the decision to install *ES III™* on all its forehearths. GX Lohr is a producer of high quality container glass and among the first of its kind to use the GS *ES III™* for fully automatic glass melter control and has successfully done so for over 10 years. The forehearth installations were completed in March 2017, with very positive customer feedback regarding fully automatic job changes and increased stability.

Batch & Furnace Manager of GX states:

„During the last weeks we made twenty-one (21) fully automatic job changes using *ES III™*. A great success! (Ein toller Erfolg!).

We do top job changes; one increases from 48 to 73 TPD and one from 50 to 91 TPD, with temperature changes for the spout area of 60 to 85°C.“

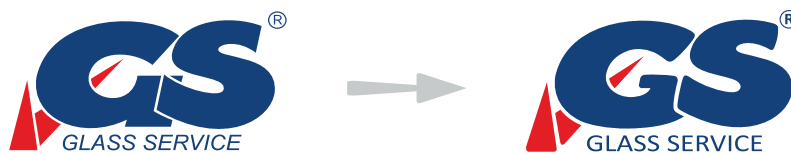
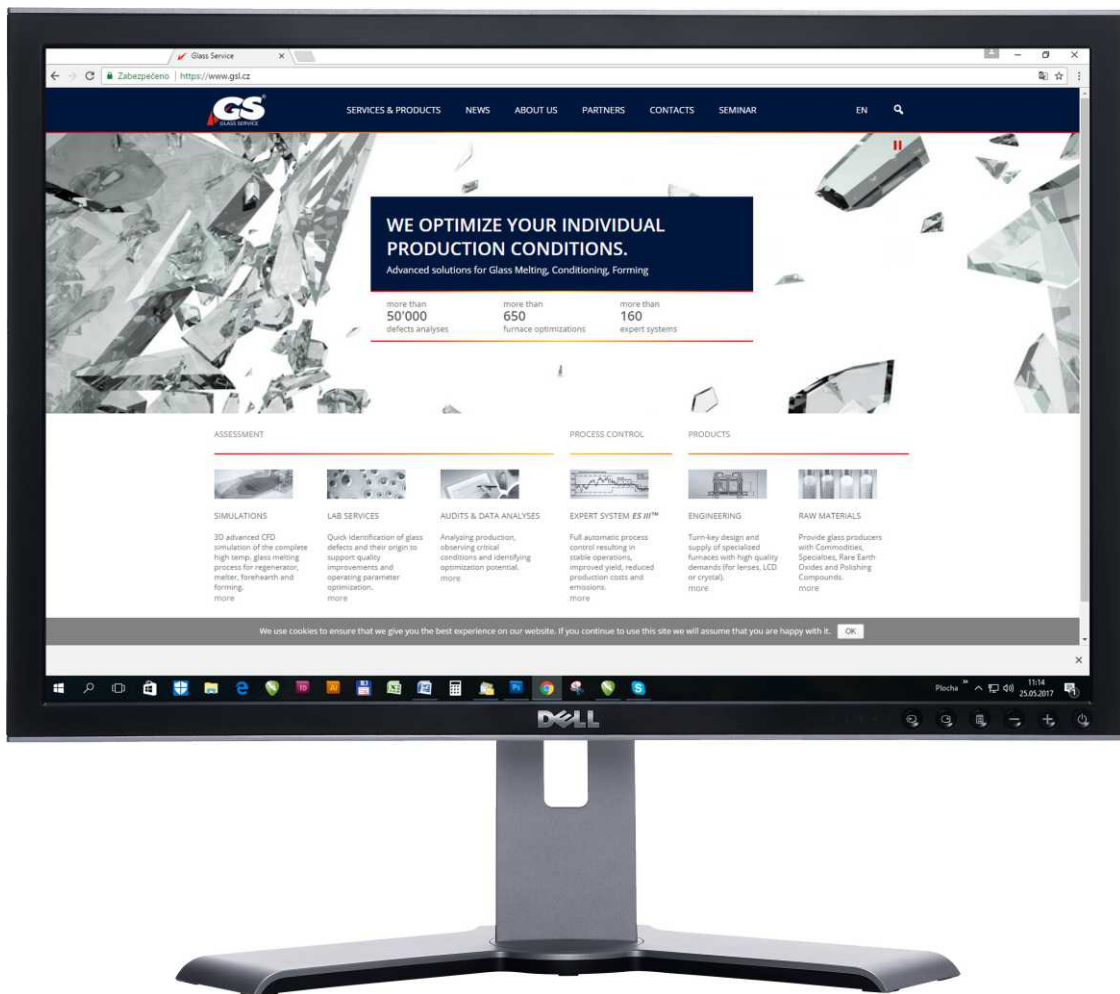


This happy customer is Mr. Pfeufer, Batch & Furnace Manager at GX Lohr

# GS launches new website and updates logo

By Jana Chovancova

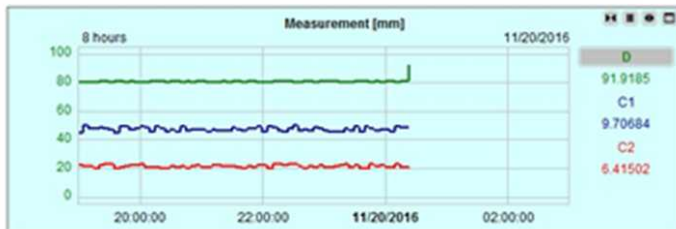
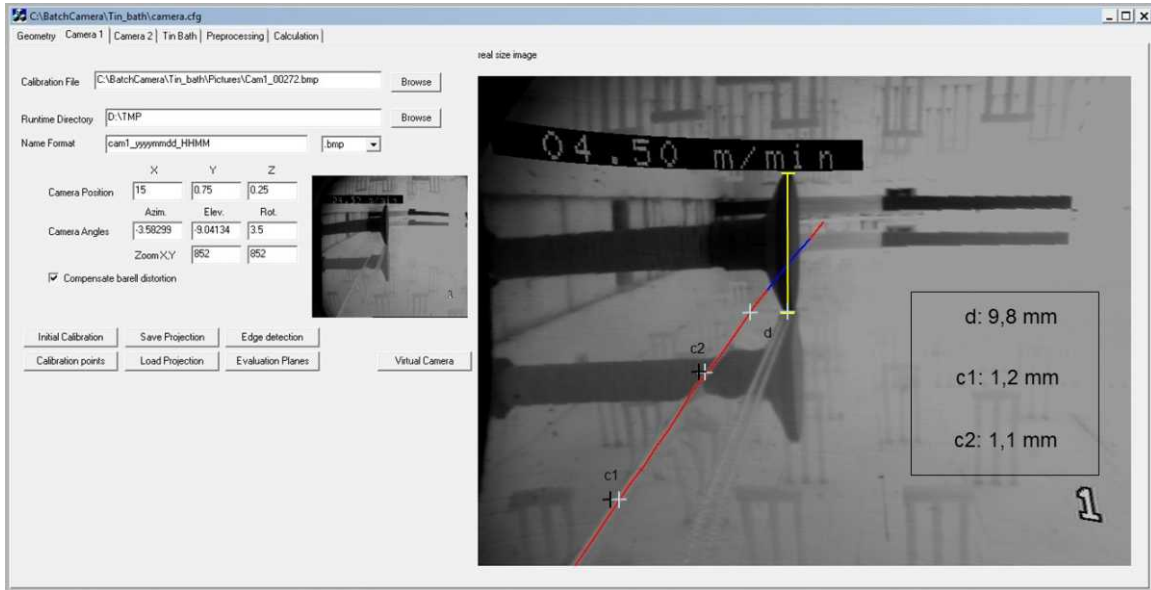
After six months of intense preparation, GS released its new website and company identity with our new GS logo. It is intended that the new format will give the customer a fresh and updated view of all products that GS offers. Furthermore, important and timely customer news and additional animations can be added with ease. For a personal look, check for yourself at [www.gsl.cz](http://www.gsl.cz).



# New sensing technology

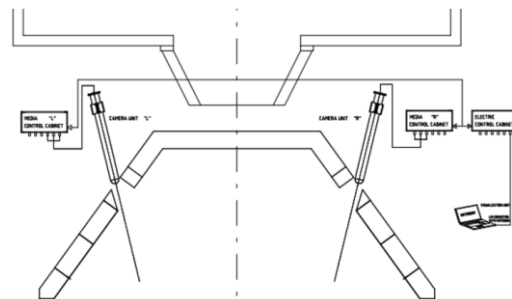
By Erik Muijsenberg

GS has developed and refined the best high resolution camera technology to withstand and service the harsh glass melting environment. The GS camera processes the picture by automatic imaging software that can detect changes to the melting or conditioning process, e.g. in batch melting or in the tin bath area.



Measurement [mm]	
D	91.9
C1	9.7
C2	6.4

Picture of tin bath edge detection



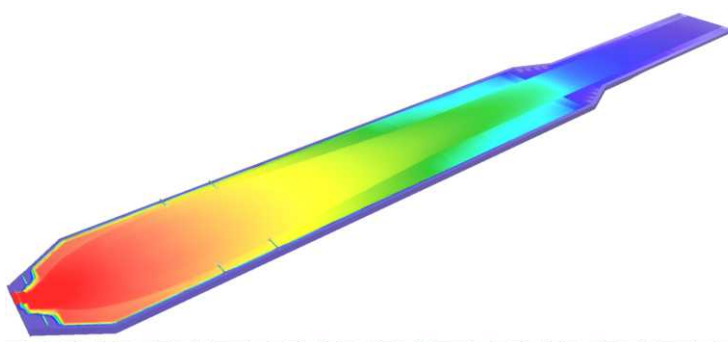
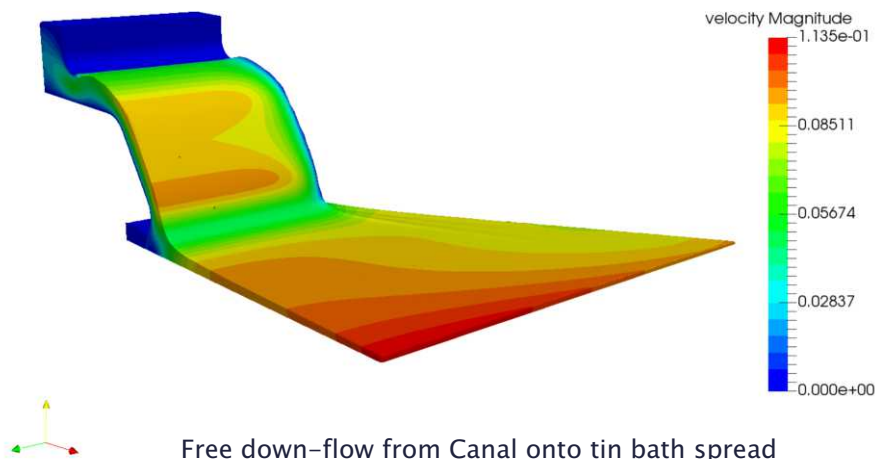
Cameras for spread detection

# GS progress on simulating the complete tin bath flat glass forming process (extension of GS GFM 4.19)

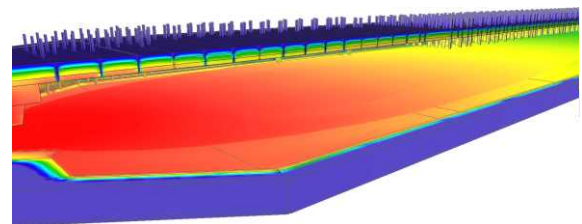
By Josef Chmelar

Glass Service has been able to calculate the free overflow of the glass coming from the canal and its initial spread on the tin.

This was accomplished by in-house development of a finite elements solution to calculate the spread of the glass, which was then coupled with simulation of both the tin flow, and the upper space.



Model of ribbon floating on top of molten tin



Complete tin bath model

## FIC... the only electric glass melting company which thinks outside the box

By Stuart Hakes

It has been a busy start to the year at FIC (UK) Limited.

FIC attended the Glasspex exhibition in Delhi, India, the Glassman exhibition in Buenos Aires, Argentina, and China Glass in Beijing where the company rejoined many good friends and customers and met interesting new customers with potential projects.

FIC is just starting up their first boost for high alumina cover glasses in China. This 6 zone boost system employs very new advanced technology in the control systems. At the time of writing, the furnace has just finished warm-up and they are in the middle of commissioning.

FIC has also received a further order for a cover glass project for another customer. This project is „equipment only” as the system has been designed by the customer and will be implemented by it.

There are further projects in the pipeline, yet to be agreed, for various companies including TFT glass, boro float and containers.

Regardless of the economic slowdown in China, FIC still receives good enquiries from the region. In South America they are discussing on two or three large scale projects following the attendance at Glassman, Buenos Aires. Russia remains an active market and FIC attended Mir Stekla to follow up with potential customers.

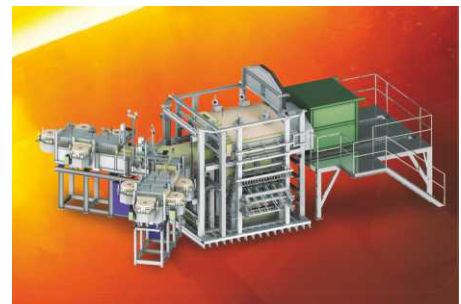
FIC is actively engaged in a program for IR 4.0 in order to prepare itself for the next step in the industrial landscape.



## GS Engineering delivers specialized unique melting devices

By Frantisek Masarik

GS Engineering department delivers complete, specialized, small (electric) melters for any production type. Our main areas of focus include specialty glasses such as optical and crystal, as well as borosilicate. Meet with our engineering manager Frantisek Masarik during the Seminar to discuss the rewards of installing and operating a GS electric melter.





# GS Raw Materials are used by big producers and by local glass schools

By Tomas Chmelar

Since 2009, Glass Service has supported glass producers of Central and Western Europe with high-quality raw materials. In synergy with a deep understanding of the glass melting process and in-house laboratories, only the right products for glass are included in the GS portfolio.

Despite its international presence, GS remembers its roots within the local community, providing special attention and cooperation to glass schools in the region.

New prospective students use GS Raw Materials during their first experiences with glass making. Their studies are a stepping stone into their future glass industry careers and GS takes the value of fresh talent very seriously. Consequently, GS does its best to help students grow into professionals by nurturing their potentials.



Students of a local glass school making and working with glass using GS Raw Materials

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