Combining research and family – aerial photography specialist Franz Kurz

30 September 2011

A traditional job. Varied and in touch with reality. Franz Kurz began looking for a job outside his parents' bed and breakfast in Berchtesgaden, southern Germany, and found what he was looking for. Today, at 38, he is a project manager at the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) Remote Sensing Technology Institute (Institut für Methodik der Fernerkundung; IMF) in Oberpfaffenhofen and father to an 18-month-old son.

The best of both worlds

"The best thing is that I can do both – I can spend time with my family, watch my son grow up and at the same time be involved in the latest research, helping to develop projects at the Institute," Franz Kurz explains. The same holds true for his partner, also a scientist at DLR, who is working on the TanDEM-X satellite mission; they share their parental leave entitlement.

Franz Kurz has worked at the DLR-IMF, since 2005. Before joining DLR he obtained a doctorate in geodesy at the Technische Universität München and completed a visiting research fellowship in Barcelona. He specialised in image processing and mapping from aerial photographs. As Project Manager, he is responsible for VABENE, a traffic management system designed to support emergency services during major events and disasters. His tasks include conducting flight campaigns and developing the software, as well as producing the aerial photographs, damage maps and traffic congestion data.

His system will be used for the German Unity Day celebrations to be held on 1-3 October 2011 in Bonn, where, with his colleagues, he will support the police in the control centre with up-to-the-minute aerial data regarding the traffic situation. This data will be used to warn drivers about traffic congestion and to provide information about, for example, available parking spaces and route planning. But in the event of a disaster, VABENE can also give the emergency services details about the fastest way to their destination, the situation after a landslide, the roads that must be closed off after a flood and those that can still be used safely.

Taking part-time parental leave

Franz Kurz's priorities changed when his son Hannes was born in 2010. “At the beginning I wasn't sure if I could manage it all. But we organised our lives to fit around the little one – and it’s working,” says Franz, a proud father. He initially cut his working hours down to 20 hours per week and gradually worked his way back up to 36 hours. Flexible time management, working from home and his manager's support have all helped to make this possible. Luckily, obtaining the latter was not difficult; his boss took part-time parental leave himself in the 1980s – a pioneer within the organisation.

Beautiful reality

What Franz Kurz likes most about his work is that something tangible comes out of it at the end of the day. During the survey, the team first gets a view of the whole picture – of Earth and its surface. Then, back on the ground, they focus on details, assessing and compiling data from the local area. "That's when it all becomes real,” says Kurz, explaining the attraction of the 'photogrammetr' of aerial photograph measurements.

The aerial photographs for the DLR VABENE project are taken from altitudes of up to around 2000 metres. These photos show in razor-sharp detail how streets and cars weave their way

through cities. Every time he looks at his research photos, the scientist discovers some new detail; even large areas of countryside hold his attention. After the lengthy preparations for a flight campaign, the photos are a superb reward for the project manager.

Calmly calibrated

Franz Kurz is not what you would call a passionate photographer, even when he is on holiday. Waiting for the right picture at the right moment – that's not his style. “I just haven't got the patience,” claims the scientist. Amazing, considering the enormous patience he has when it comes to calibrating a high-speed camera. Give the geodesist the job of calibrating the focal length of the camera down to one hundredth of a millimetre, and he is absolutely in his element.

Before a measuring campaign for VABENE, he spends days adjusting, checking, measuring and testing whether the DLR 3K camera system will accurately deliver the required pictures with the desired quality. The three DLR cameras with their different lines of sight are designed to take pictures of the area they are flying over. The data is transmitted in real-time. Up to five photographs are taken every second, and, as a result of the flight movement, they partially overlap. From this influx of photographs the team has to create a uniform, high-resolution picture with 'georeferencing' – three-dimensional positioning. They can even obtain 3D data about Earth’s surface from the real-time images.

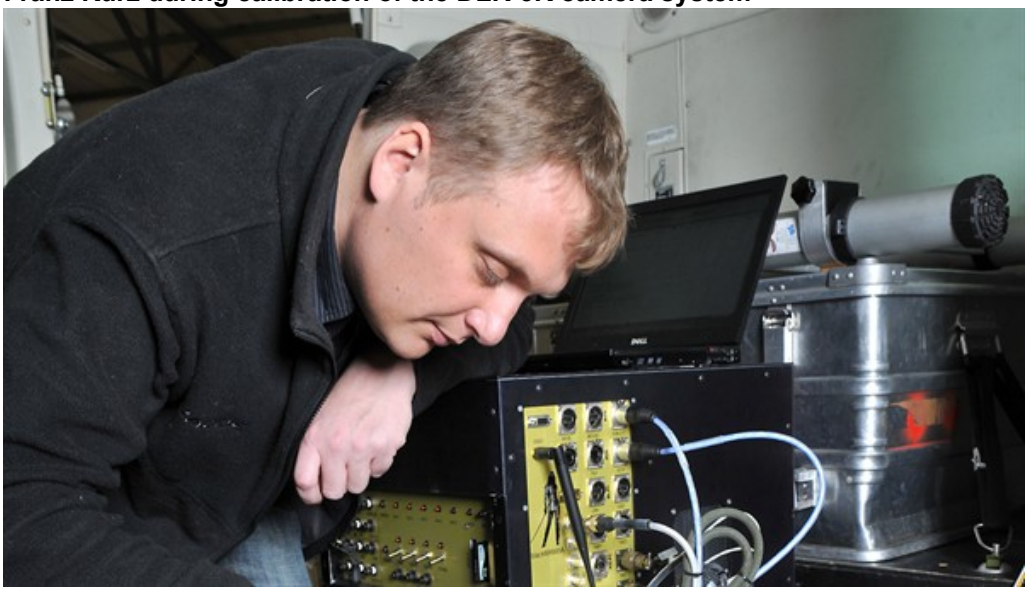
That does not sound like a job for impatient people. “That's true. Obsessive attention to detail doesn’t really suit me at all,” Franz Kurz says, giving a laugh and a happy shrug of his shoulders. He takes it all calmly.

Contacts

Bernadette Jung
German Aerospace Center (DLR)
Public Affairs and Communications: Oberpaffenhofen, Weilheim, Augsburg
Tel.: +49 8153 28-2251
Fax: +49 8153 28-1243
Bernadette.Jung@dlr.de

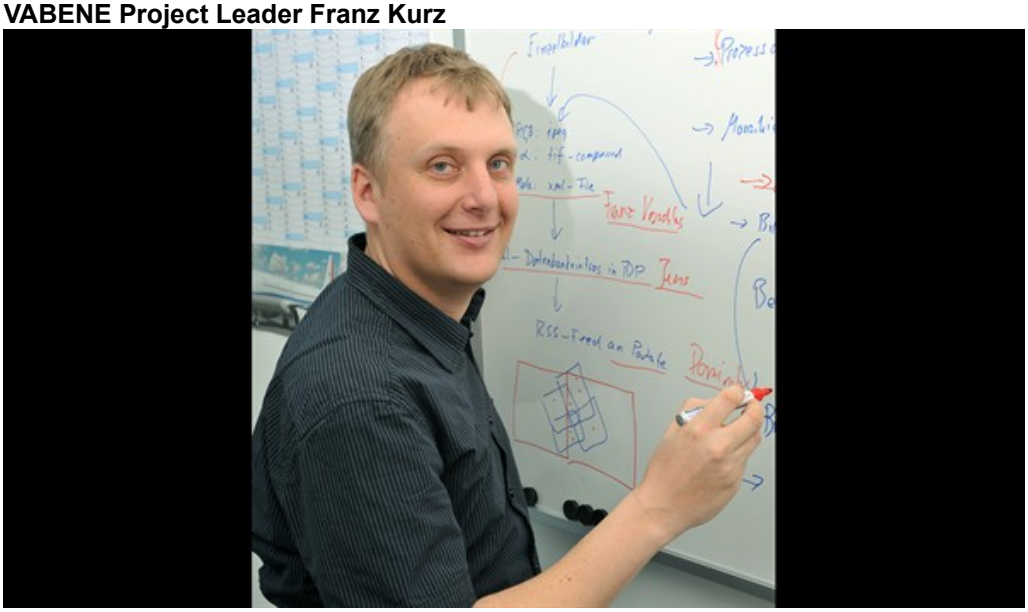
Dr. Ing. Franz Kurz
German Aerospace Center (DLR)
Remote Sensing Technology Institute
Tel.: +49 8153 28-2764
Franz.Kurz@dlr.de

Franz Kurz during calibration of the DLR-3K camera system



Before a measurement campaign, the DLR cameras must be calibrated very precisely. Franz Kurz enjoys his work very much, in that, at the end of the day, something tangible is produced – a beautiful image.

VABENE Project Leader Franz Kurz



Franz Kurz specializes in image processing and mapping from aerial photographs. His role as VABENE Project Leader is to carry out air campaigns and includes software development as well as the creation of aerial photographs, maps and traffic congestion data.

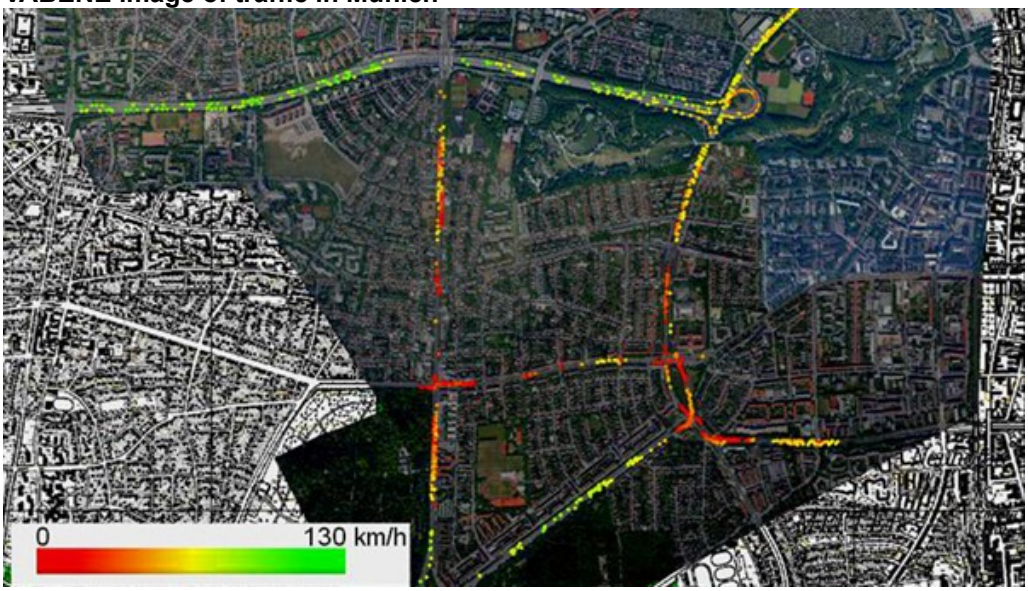
Credit: DLR (CC-BY 3.0).

Image from the 3K camera – flooded area of the tributaries of the rivers Oder and Neisse

The aerial photographs for the DLR VABENE project are taken from altitudes of up to around 2000 metres. 3D data about Earth's surface can be derived from the real-time images.

Credit: DLR (CC-BY 3.0).

VABENE image of traffic in Munich



VABENE is a traffic management system to support the emergency services at major events and during disasters. The data can be used to create real-time images of traffic conditions, among other things.

Credit: DLR (CC-BY 3.0).

Contact details for image and video enquiries as well as information regarding DLR's terms of use can be found on the DLR portal imprint.