

CAPI



HPCN TTN Network

Faster turnaround

Remote collaboration speeds up turbine blade development

Technology companies working in highly specialised fields often require resources that are not commercially available. One such resource is software. Small and medium-sized enterprises (SMEs) in particular cannot always afford to develop proprietary software, so must collaborate with other enterprises and institutions. In the past this has meant sending engineers to the partner's location. In addition to the time and expense involved, this is detrimental to the development workflow.

The answer is remote CSCW (Computer Supported Collaborative Work). This has been experimented with for some years, but only now are the technologies widely available to make it a true alternative for SMEs. These include high-bandwidth data lines, WWW technologies for portable client-server systems and standardised, cross-platform videoconferencing and application sharing systems.

CAPI is a recent real-world case study aimed at validating CSCW within the framework of aeroelasticity simulations of wind-turbine blades. It involved HPN (High Performance Networking) with video conferencing and remote software session sharing. The focus was not merely on enabling access to remote computing resources, but also on the broader concept of resource sharing and direct synchronous collaboration between people.

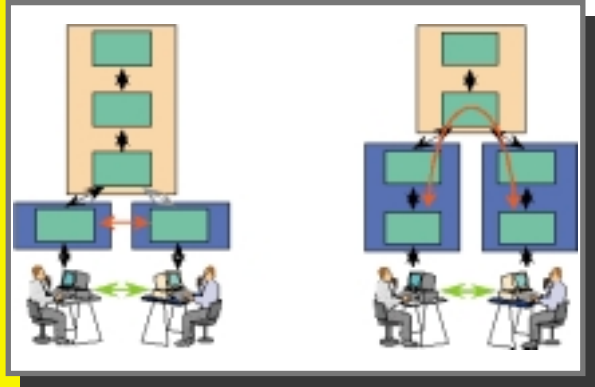
The CAPI participants realised expected as well as unexpected benefits:

- The reduction in the need for travel creates immense time savings.
- Processes can be subdivided into more manageable sub-processes.
- Redundancies are reduced.
- Geographically remote partnerships become viable.



On-line collaborative work session

Apart yet together



Remote collaboration can take various forms

CAPI linked 6 partners in two countries:

- CRAIN (F) and AERODYN (D), two SMEs doing wind-turbine design studies
- Germanischer Lloyd (D), an international organisation that ensures quality and security control, and provides technical expertise to industry
- ONERA (F) and DLR (D), two National Aerospace Research Centres
- The University of La Rochelle (F)

CRAIN in La Rochelle (F) needed to use an experimental aeroelasticity prediction code, available around 500 km away at ONERA near Paris (F). ONERA assisted CRAIN engineers through a collaborative environment. CRAIN analysed its results in collaboration with AERODYN in Rendsburg (D), and Germanischer Lloyd in Hamburg (D) worked with CRAIN and AERODYN for certification and validation of the results. To analyse the influence of network infrastructure, ONERA and its German partner DLR performed experiments over international connections through high-speed networks. The University of La Rochelle provided CRAIN with access to these networks, and analysed the technical problems encountered.

This complex project has successfully demonstrated shorter work cycle duration, faster reaction times and thereby improved competitiveness for the companies involved.

High Performance Computing and Networking Programme

The HPCN Programme is an EU initiative to make high-performance computing available to small and medium-sized enterprises. This is supported by a pan-European network of 21 Technology Transfer Nodes (TTNs). Each TTN acts as a resource centre, providing access to the combined know-how of the entire HPCN TTN Network and contacts to firms and experts engaged in other HPCN projects. Currently some 150 projects are underway.

For more information contact <http://caprice.dlr.de/capi> or one of the CAPI project partners:

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