

## TECHNICAL PREPARATIONS FOR REMOTE PARTICIPATION AT JET

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By 2000 the JET facilities will be exploited in a campaign-oriented collaboration of the Associations of the European Fusion Programme. This new phase will be based on both an increased presence of personnel from these laboratories at the JET site and on Remote Participation. In contrast to High Energy Physics the operation of a large device as a "community" effort is new to the fusion research area. Participation of the Associations in the post-99 exploitation of the JET facilities will involve: \* Preparation of experimental campaigns, \* Preparation of experimental sessions, \* Execution of the experimental campaign at the site, \* Data analysis. The following technical issues will be covered in the presentation: \* The most urgent requirements is for a platform-independent remote access to JET's data archive. Read access has been implemented based on a standard data format and using standard web access. A dedicated server at JET serves data in this format both to on-site and off-site users. Write access will be available soon using secure HTTP transfer. Access to data is protected by user id and password \* A platform-independent data display programme is in the advanced stage of development. This is based on IDL and will incorporate the features of several different display packages in existence at JET. This single display package is intended for on-site users and remote users. \* Some classes of users will require full remote log in to computers on-site, including eventually controlled access to on-line computers. This will be achieved by a dedicated NT server in combination with CITRIX ICA clients at the remote locations. ICA clients are available for practically all computing platforms. This access will be additionally protected by the Secure ID system. \* The increased communication needs between the Fusion labs result in the requirement for higher Internet connection bandwidth. An investigation has started into feasibility of a reserved-bandwidth network for the European fusion community using the European Commission's TEN155 initiative. \* Computing network structures need to be security re-evaluated in order to cope with the remote access requirements. In particular, JET will change its internal network structure to provide better separation of less critical off-line activities from directly plant-related computing. \* Audio and video teleconferencing tools will be evaluated and prototypes tested for multi-location meetings and also for remote session preparation and control room participation. The following organizational aspects will be covered: \* Data storage will be centrally managed by the experiment even if the physical storage of data can be distributed. \* With the increase in number of data users and secondary data producers the approach to data validation and integrity needs to be adapted. \* An issue which grows with the increase of the user community is the protection against data misuse and the protection of author's rights over data. \* With a growing remote user community the approach to providing the necessary documentation needs to be reviewed and the means for providing documentation need to be adapted.