



Dissemination and Use Plan

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Dissemination
Public

IST-1999-10033 Long Distance Photonic Quantum Communication - QuComm

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***Long Distance Photonic Quantum
Communication***

Deliverable D3

Dissemination and Use Plan

Dissemination Level: Public

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DISSEMINATION AND USE PLAN

The QuComm consortium aims at extending experimental quantum communication protocols towards longer distances, to demonstrate quantum cryptography using entangled quantum states to achieve an increased level of security compared to faint-pulse quantum cryptography, to validate optical quantum communication technologies in an application context through various field tests. If successful the project will provide novel technologies for more secure communication and will be a key enabler for quantum communication in general. There are important spin-off technologies that will benefit from the work in the project, for example Optical Time Domain Reflectometry (OTDR) and laser range-finding.

The dissemination of our results is planned through scientific publications, conferences, internet, and workshops while the exploitation and use of the devices/systems is planned for field like demonstrators and transfer to downstream users.

1. DISSEMINATION

The dissemination strategy of QuComm involves three main directions

1.1. Internet

Two Web sites are planned, an internal site to facilitate the communication among the members of the consortium and a public site for the dissemination of information to external interests. The coordinating group KTH will maintain the two Web sites.

- 1.1.1. The internal site, June 2000 not yet in operation, will be a working tool of the project to supplement communications among the partners and exchange of files and data via email. It will be a storing area for data that are of use to more than two participants, such as component specifications or joint publications in the course of their elaboration by the partners.
- 1.1.2. The public site, in operation since January 2000, is directed towards the scientific community at large. It provides a brief description of the project, of the participants, and of the main results, all in a popular manner. It features links to the Web sites of the participants and to the relevant IST/FET Web pages.

1.2. Printed communication

1.2.1. Reports

Reports, produced bi-monthly and sent among partners and to the commission, six month deliverable reports, describing the main results of the project and progress of the different workparts, will be the main means of communication of the consortium with the European Commission. The six months deliverables will also be sent to the industrial advisory committee, to be described below.



1.2.2. Publications

The scientific results obtained within the project will be published by the partners who collaborated in them in the open scientific literature. The QuComm project and the financial support of the European Commission will be explicitly acknowledged.

1.3. Conferences

1.3.1. Presentation of individual results

It will be the responsibility of the partners participating in obtaining a particular result to bring it to the attention of the wider scientific community by presenting it at international conferences relevant to the field. The QuComm project and the support of the European Commission will be acknowledged each time.

1.3.2. Thematic workshops

The QuComm consortium will organize and/or participate in the organization of workshops focused on the issues of quantum information and communication. The purpose of these workshops is to bring together in an informal setting a small number of researchers and research students working on a particular issue. The first such workshop in which QuComm will participate will be organized in collaboration with the EQCSPOT, S4P and QuiCov consortiums in Cargèse in Corsica in April 2001 on the technologies of quantum cryptography.

1.3.3. QIPC workshops

The QuComm consortium will be an active participant in the network of excellence on QIPC that is being set up to bring together the scientific community working on different aspects of quantum information. QuComm will contribute to the workshops organized by the IST/FET bringing together the cluster of projects focused on QIPC.

2. EXPLOITATION

The exploitation strategy of the consortium is centered on the demonstration of quantum communication technologies in application-near settings as well as the demonstration of the added value provided using quantum technologies. The exploitation will involve (1) the development of demonstrators, (2) collaborations with downstream users and (3) protection of intellectual rights of the devices/systems developed.



2.1. Demonstrators

The project will realize a number of demonstrators, both novel entangled light sources, as well as systems demonstrators, notably on quantum cryptography. The experiences gathered from the realization of the demonstrators, as well as when applicable the devices themselves will be proposed for use to other QIPC consortia working on related issues, such as EQCSPOT and EQUIS. Other uses of the entangled light will be exploited for fundamental quantum optics of entangled states, as well as possible applications in optical metrology (notably in fiber dispersion measurements, detector quantum efficiency measurement and optical time domain reflectometry-OTDR).

2.2 Collaborations with downstream users

2.2.1. Industrial participation in the project

There are two industrial partners in the project, P08 DERA and partner P07 TH CSF. All partners also have other industrial contacts, e.g. from national programs, and through other programs in ESPRIT, ACTS, COST and IST. In particular, DERA is interested in the exploitation of entangled state cryptography and spin-offs in metrology and range finding, and Thomson-CSF TCC/SSI shows interest in using the results to define the key introduction phase in high security level ciphering equipment. Cases of operational need corresponds to very sensitive applications in which an unconditional security is required and who handle communications within a limited range of one hundred kilometers or less, demanded by the quantum channel. Such cases are for instance communications line between secured entities and remote control of satellites.

2.2.2. Industrial advisory group

In addition to the above, a small industrial advisory committee will be set-up. The industrial advisors are selected on the basis of their company's industrial role in the field, and the advisor's own position in the company, in terms of their ability to a) consult for our project, and b) transfer technology from the project to industry. Advisors from telecom operators, telecom- and optoelectronics industry are chosen for the project.

2.3. Intellectual Property Rights

No problems with intellectual property (IPR) are foreseen. IPR may arise from the design of specific devices or schemes, which should belong to the partner who makes the effort, as it would rely on know-how unrelated to the program. Therefore, we consider at this stage the work undertaken to be open, which should facilitate the dissemination of results. However, should IPR issues occur, the partners involved in that result will have the right to withhold information on their work from the consortium, until adequate legal protection is provided. A consortium agreement, which more detail will regulate IPR issues, has been proposed by TH LCR and circulated among the partners. It is currently under discussion.