Initial Report on Dissemination

L.M. Delves
N.A. Software Ltd

Deliverable:	D3.1a
Date:	December 1996
Status:	draft
Confidentiality:	public
Responsible:	NA Software
Revised:	January/7/1997

The **HPF+** Consortium:
AVL GesmbH - Austria
European Centre for Medium-Range Weather Forecasts (ECMWF) - England
Engineering System International SA (ESI) - France
NA Software Ltd (NAS) - England
University of Pavia - Italy
University of Vienna - Austria

1 Introduction

This Deliverable provides a brief report on dissemination activities carried out to date in the HPF+ project. These activities include:

Preparation of Conference and Journal Papers : Because of the research orientation of the project, this aspect of the dissemination has dominated;

Presentation of Lectures : at Workshops and Seminars;

Standards Activities : via attendance at HPFF meetings and the provision of input to the HPF2 design process;

International Workshop : A workshop has been organised for January 1996 (just before the Review).

2 Papers Presented or Submitted

1. G. Lonsdale, *Parallel and Distributed Crashworthiness Simulation*, lecture with accompanying paper given at the CERN School of Computing, Egmond aan Zee, Netherlands, 20th September 1996.

   This paper included a description of the HPF+ project, and an overview of foreseen HPF+ requirements.

2. L.M. Delves and D. Watson, *Generalised Reduction Facilities for HPF*, paper to be presented at the Euromicro Workshop, January 23rd 1997

   This paper stems from proposals made in an HPF+ Working Paper

3. Andel,S., Di Martino,B., Hulman,I., Zima,H.P.: Program Comprehension Support for Knowledge Based Parallelization
   Proc. 4^{th} *EUROMICRO Workshop on Parallel and Distributed Processing*, Braga, Portugal (January 1996)

4. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: High Performance Applications: State-of-the-Art and Future Requirements
   1996 Spring Proceedings, Cray User Group, pp.6-13 (March 1996)

5. Mehrotra,P., and Zima,H.P.: Extending High Performance Fortran for Advanced Applications
   Proc.Sommerschule Partielle Differentialgleichungen, Numerik und Anwendungen, KFA Jülich (September 1996)

6. Zima,H.P.: High Performance Languages for Parallel Computing
   IEEE Computational Science and Engineering,Vol.3,No.3,pp.63-65 (Fall 1996)

7. Benkner,S.,Mehrotra,P.,Van Rosendale,J.,Zima,H.P.: Current State and Future Developments of HPF-Like Languages
Proc. Seventh ECMWF Workshop on Parallel Computers in Meteorology, Reading, England (December 1996) (in print)

8. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: HPF+: New Language and Implementation Mechanisms for the Support of Advanced Irregular Applications
Proc. Sixth Workshop on Compilers for Parallel Computers (CPC'96), Aachen, Germany (December 12, 1996)

9. Mehofer,E.,and Zima,H.P.: Distribution Assignment Placement Based on Bidirectional Data Flow Frameworks
Technical Report TR 96-, Institute for Software Technology and Parallel Systems, University of Vienna (December 1996)

10. Chapman,B.M.,Zima,H.P.,Haines,M.,Mehrotra,P.,Van Rosendale,J.: OPUS: A Coordination Language for Multidisciplinary Applications
Scientific Programming (in print)

11. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Vienna Fortran and the Path Towards a Standard Parallel Language
Invited paper, IEICE Trans.Information and Systems,Vol.E80-D,No.4 (April 1997) (in print)

3 Lectures Presented

1. G. Lonsdale, *Crash Simulation: A Challenge for HPF*, presented at the Industrial End User Session, HPCN 96, Brussels, April 96.

   Included an introduction to the PAM-CRASH algorithms and structures, the consequences for HPF and HPF+ implementations, and an overview of the HPF+ project.

2. G. Lonsdale, *Aims and Objectives of the HPF+ Project*, presentation at NEC Corporation C&C Research Laboratories, Kawasaki, Japan, May 31st 1996.

3. G. Lonsdale, *HPF+ Kernels and Requirements*, presented at the **Summer of HPF** workshop, Vienna, 3-4 July 1996.

4. G. Lonsdale, *Parallelization Requirements for Crash-simulation on HPC Platforms*, presented at the GMD-NEC Workshop, Skt Augustin, 17-18 September 1996.

5. G. Lonsdale and G. Mozdzynski, *HPF+*, presentation at the tenth RAPS Workshop (part of the seventh ECMWF Workshop on *The Use of Parallel Processors in Meteorology*, Reading, 4th December 1996.

6. OPUS: Abstractions for High Performance Distributed Computing
   Invited Lecture

Workshop on Languages and Models for Future Computing Systems, University of Vienna (January 23, 1996)

7. Vienna Fortran – Eine Sprache für die Programmierung von massiv parallelen Hochleistungsrechnern
   GMD FIRST Colloquium, Berlin, Germany (January 29, 1996)
8. High Performance Applications – State of the Art and Future Requirements
   Spring'96 Cray User Group Conference, Barcelona, Spain (March 14, 1996)
9. HPF+
   Dagstuhl Seminar on Loop Parallelization, Dagstuhl, Germany (April 17, 1996)
10. High Performance Languages for Parallel Scientific Computation
    Colloquium, School of Mathematics and Physics, University of Bratislava (June 18, 1996)
11. Extending High Performance Fortran for Advanced Applications
    Sommerschule über Partielle Differentialgleichungen, Numerik und Anwendungen
    KFA Jülich, Germany (September 3, 1996)
12. High-Level Languages for Parallel Scientific Computation
    Scuola per il Dottorato di Ricerca, GII – Grupo Ingegneria Informatica
    University of Pavia, Italy (September 10, 1996)
13. High-Level Programming Support for Scalable Parallel Systems
    Parallel Numerics'96, Gozd Martuljek, Slovenia (September 11, 1996)
14. Current State and Future Developments of HPF-Like Languages
    Seventh ECMWF Workshop: Use of Parallel Computers in Meteorology, Reading, England (December 5, 1996)
15. HPF+: New Language and Implementation Mechanisms for the Support of Advanced Irregular Applications
    Sixth Workshop on Compilers for Parallel Computers (CPC'96), Aachen, Germany (December 12, 1996)

4 Conferences and Workshops Attended

Partners have participated in the following technical conferences, workshops and meetings:

Event	Participating Partner
EUROMICRO 24-26/1/96, Braga	U. Pavia
NEC CRL Japan	NEC-CCRLE
HPCN Europe 15-19/4/96, Brussels	VCPC U. of Pavia NEC
Summer of HPF,3-4/7/96, Vienna	U. of Vienna NEC-CCRLE
HPFF 12-14/7/96, S. Francisco	U. of Vienna
GMD-NEC Workshop, 17-18/9/96, St. Augustin	NEC-CCRLE
7th ECMWF Workshop, 2-6/12/96, Reading	ECMWF NEC-CCRLE U. of Vienna

5 Standards Meetings: HPFF

The project has been well represented at the HPFF (HPF Forum) meetings held during 1996 to design the HPF2 upgrade to HPF. This attendance has provided the opportunity to make the HPF+ project, and the HPF+ language effort, known within the core HPF design community. Perhaps more importantly in the long term, it has allowed significant input from HPF+ into the HPF2 design exercise. This input has had directly visible effects; for example, the `GEN_BLOCK` and `INDIRECT` distributions in HPF2 stem directly from Vienna proposals as in the HPF+ language.

HPFF Meetings attended include:

1. March 13-15 1996, Arlington, Texas: VCPC
2. May 1-3 1996, Arlington, Texas: VCPC
3. July 17-19 1996, Chicago: VCPC
4. September 18-20 1996, San Francisco: NAS
5. November 19 1996, Pittsburgh: Univ. Vienna
6. December 9-11 1996, Houston: NAS

6 HPF+ Workshop

As a major dissemination activity, the project has organised a one day International Workshop on HPF+, to be held at Reading, January 21st 1997. This workshop includes several talks from HPF+ partners, together with invited talks from other active HPF research workers and users. It's major aim is to present the HPF+ project work in the context of the use of HPF for real problems.

7 Web Pages

The project maintains a substantial WWW presence, on:
`http://www.par.univie.ac.at/hpf+`