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RECORDATION FORM COVER SHEE SUBSTITUTE 03-08-2002 FORM PTO-1595 ark Office PATENTS ONLY EB 5 1 5005 To the Honorage Commission of Patents and Trademarks: Please record eof. 102006584 Name of conveying party (25): 2. Name a. NORTHWESTERN UNIVERSITY Name: UNITED STATES AIR FORCE Internal Address: AFRL/IFOJ Additional name(s) of conveying party(ies) attached Nature of conveyance: Street Address: 26 ELECTRONIC PARKWAY ☐ Assignment □ Merger City: ☐ Security Agreement □ Change of Name **ROME** State: NEW YORK Zip: 13441-4514 Execution Date(s): 24 JANUARY 2002 tal register in accordance with 37 CFR 7.1(e)(1). Additional name(s) & address(es) attached? ☐ Yes ☒ No Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: _ B. Patent No.(s): A. Patent Application No.(s): 09/770,541; 09/773,211; 09/812,399 6. Total number of applications and patents involved: Name and address of party to whom correspondence concerning document should be mailed: AFRL/IFOJ Name: 7. Total fee (37 CFR 3.41)\$ Internal Address: Not applicable □ Enclosed 26 ELECTRONIC PARKWAY Street Address: The instrument to be recorded is not an instrument affecting title (37 CFR 7.1(e)(2) and (j)). ROME City: 8. Deposit account number: 13441-4514 **NEW YORK** ZIP: (Attach duplicate copy of this page if paying by deposit account) State: DO NOT USE THIS SPACE To the best of my knowledge and belief, the feregoing information is true and correct and any attached copy is a true Statement and signature. copy of the original document. JUDITH M. DECKER Name of person signing Total number of pages including cover sheet, attachments, and document:

> PATENT REEL: 012635 FRAME: 0484

LICENSE TO THE UNITED STATES GOVERNMENT

WHEREAS, Prithviraj Banerjee, Alok Choudhary, Malay Haldar and Anshuman Navak. of NORTHWESTERN UNIVERSITY have invented an invention entitled, Method and Apparatus For Automatically Generating Hardware from Algorithms Described In Matlab and filed a patent application thereon in the United States bearing Serial No. 09/770,541 on January 26, 2001; and

WHEREAS, the invention was made in the course of research supported by the Defense Advanced Research Projects Agency contract number F30602-98-2-0144; and

WHEREAS, the United States Government is entitled to certain rights in and to said invention and application by reason of the terms of such support; and

WHEREAS, NORTHWESTERN UNIVERSITY, hereinafter called the "Licensor", has acquired by assignment from the inventor the entire right, title and interest of such invention;

NOW, THEREFORE

- 1 The Licensor, in consideration of the premises and other good and valuable considerations, hereby grants and conveys to the United States Government (including any agency thereof, state, or domestic municipal government) a royalty-free, non-exclusive, and irrevocable license to make, use and sell for any governmental purposes, and on behalf of any foreign government pursuant to any existing or future treaty or agreement with the United States of America, embodiments of the invention described in the aforesaid application and in any and all divisions, continuations and continuations-in-part thereof, and in any and all reissues thereof, during the full term or terms thereof.
- The Licensor covenants and warrants that it has the right to grant the foregoing license, and that any assignment which it may make of the invention or the said patent applications or patents thereon, shall expressly be made subject to this license.
- 3. The Licensor agrees that the Government shall not be estopped at any time to contest the enforceability, validity, scope of, or title to any patent or patent application herein licensed.

NORTHWESTERN UNIVERSITY

Dated: <u>January 24, 2002</u> By: <u>Indrani Mukharji, Ph.D.</u>

Executive Director

Technology Transfer Program

Northwestern University 1880 Oak Avenue - Suite 100 Evanston, IL 60208-111

> PATENT REEL: 012635 FRAME: 0485

LICENSE TO THE UNITED STATES GOVERNMENT

WHEREAS, Prithviraj Banerjee, Pramod Joisha and Nagaraj Shenoy, of NORTHWESTERN UNIVERSITY have invented an invention entitled, Method for Array Shap Inferencing for a Class of Functions in Matlab and filed a patent application thereon in the United States bearing Serial No. 09/773,211 on January 31, 2001; and

WHEREAS, the invention was made in the course of research supported by the Defense Advanced Research Projects Agency contract number F30602-98-2-0144; and

WHEREAS, the United States Government is entitled to certain rights in and to said invention and application by reason of the terms of such support; and

WHEREAS, NORTHWESTERN UNIVERSITY, hereinafter called the "Licensor", has acquired by assignment from the inventor the entire right, title and interest of such invention;

NOW, THEREFORE

- The Licensor, in consideration of the premises and other good and valuable considerations, hereby grants and conveys to the United States Government (including any agency thereof, state, or domestic municipal government) a royalty-free, non-exclusive, and irrevocable license to make, use and sell for any governmental purposes, and on behalf of any foreign government pursuant to any existing or future treaty or agreement with the United States of America, embodiments of the invention described in the aforesaid application and in any and all divisions, continuations and continuations-in-part thereof, and in any and all reissues thereof, during the full term or terms thereof.
- The Licensor covenants and warrants that it has the right to grant the foregoing 2. license, and that any assignment which it may make of the invention or the said patent applications or patents thereon, shall expressly be made subject to this license.
- The Licensor agrees that the Government shall not be estopped at any time to contest the enforceability, validity, scope of, or title to any patent or patent application herein licensed.

NORTHWESTERN UNIVERSITY

Dated: January 24, 2002 By: Indrani Mukharji, Ph.D.

Executive Director

Technology Transfer Program

Northwestern University 1880 Oak Avenue - Suite 100 Evanston, IL 60208-111

> PATENT REEL: 012635 FRAME: 0486

LICENSE TO THE UNITED STATES GOVERNMENT

WHEREAS, Prithviraj Banerjee, Malay Haldar, Anshuman Nayak, Alok Choudhary and Nagaraj Shenoy, of NORTHWESTERN UNIVERSITY have invented an invention entitled, Design System and Method to Compile Matlab Programs on Heterogeneous Platforms Comprising FPGAs and Embedded Processors and filed a patent application thereon in the United States bearing Serial No. 09/812,399 on March 19, 2001; and

WHEREAS, the invention was made in the course of research supported by the Defense Advanced Research Projects Agency contract number F30602-98-2-0144; and

WHEREAS, the United States Government is entitled to certain rights in and to said invention and application by reason of the terms of such support; and

WHEREAS, NORTHWESTERN UNIVERSITY, hereinafter called the "Licensor", has acquired by assignment from the inventor the entire right, title and interest of such invention;

NOW, THEREFORE

- 1. The Licensor, in consideration of the premises and other good and valuable considerations, hereby grants and conveys to the United States Government (including any agency thereof, state, or domestic municipal government) a royalty-free, non-exclusive, and irrevocable license to make, use and sell for any governmental purposes, and on behalf of any foreign government pursuant to any existing or future treaty or agreement with the United States of America, embodiments of the invention described in the aforesaid application and in any and all divisions, continuations and continuations-in-part thereof, and in any and all reissues thereof, during the full term or terms thereof.
- 2. The Licensor covenants and warrants that it has the right to grant the foregoing license, and that any assignment which it may make of the invention or the said patent applications or patents thereon, shall expressly be made subject to this license.
- 3. The Licensor agrees that the Government shall not be estopped at any time to contest the enforceability, validity, scope of, or title to any patent or patent application herein licensed.

NORTHWESTERN UNIVERSITY

Dated: January 24, 2002

By: Indrani Mukharji, Ph.D.

Executive Director

Technology Transfer Program

Northwestern University 1880 Oak Avenue – Suite 100 Evanston, IL 60208-111

PATENT RECORDED: 02/22/2002 REEL: 012635 FRAME: 0487