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## NAS Announces Vector Signal / Image processing Library for 2<sup>nd</sup> Generation Intel® Core™ Processors

United Kingdom; January 5, 2011: N.A. Software Ltd, a market leader in the production of DSP libraries for military applications, is pleased to announce the forthcoming release of a Vector Signal/Image Processing (VSIPL) library optimised specifically for the new Intel® Advanced Vector Extensions (Intel®AVX) contained in the 2<sup>nd</sup> generation Intel® Core™ processor family. N.A. Software already markets a highly optimised VSIPL Library for Intel® processors with Streaming SIMD Extensions (SSE). VSIPL is an application programming interface (API) defined by an open standard ([www.vsipl.org](http://www.vsipl.org)) and widely used in military DSP applications.

Mike Delves, Chairman of N.A. Software comments: “As part of our support for Intel® AVX-based hardware we are committed to producing an Intel® AVX optimised VSIPL library. Preliminary benchmarking done by N.A. Software on an early prototype board with a 2<sup>nd</sup> generation Intel® Core™ processor clearly shows the advantages of Intel® AVX. We are currently running timings for these same benchmark routines on the most recent versions of the Intel® processors and expect even better gains.”

“Optimized digital signal processing libraries such as these from NA Software will enable application developers to take advantage of the new features in our 2<sup>nd</sup> generation Intel® Core™ processor family,” said Matt Langman, director of product marketing, Intel Embedded Computing Division.

Benchmark timings overall show a performance gain of between 40% and 80% for VSIPL routines compiled for processors with Intel® AVX vs the same ones compiled with SSE flags on the same hardware platform. Timings below (in microseconds) for typical benchmark routines illustrate this point.

**1D in-place complex-to-complex FFT: vsip\_ccfftip\_f timings.**

Input Data Length	256	1K	4K	16K	256K	512K
SSE NAS	1.8	8.3	53	298	6,692	17,230
AVX NAS	1.2	4.4	33	219	4,367	12880

**2D in-place complex-to-complex FFT: vsip\_ccfft2dip\_f timings.**

Input Data Length	256*256	1K*100	4K*50	16K*20	64K*20	128K*20
SSE NAS	1,185	92,563	92,563	69,969	326,998	678,488
AVX NAS	857	89,603	95,778	69,527	323,580	662,831

**Vector Sin: vsip\_vsin\_f timings.**

<b>Input Data Length</b>	<b>256</b>	<b>1K</b>	<b>4K</b>	<b>16K</b>	<b>32K</b>	<b>64K</b>	<b>128K</b>
<b>SSE NAS</b>	3.0	12	46	185	369	739	1,478
<b>AVX NAS</b>	1.7	7	27.7	110	221	444	888

A Beta release of the N.A. Software VSIPL supporting Intel®AVX is due in February 2011 with the Gold release ready to market by the end of April 2011.

**About N.A. Software Limited**

N. A. Software Ltd (NAS) was founded in 1978 as a hi-tech spinoff from the University of Liverpool. The company has two main activity areas:

**Consultancy** - We carry out software and algorithmic research, development and consultancy for a wide range of organisations. Areas of particular expertise include DSP; SAR processing; image understanding and analysis; parallelism; scientific and engineering computational techniques, particularly in signal processing.

**Software Tools** - We develop and market a range of innovative software tools including VSIPL and other vector libraries for advanced processors; the Liberator library generator; and InfoPACK, a SAR (Synthetic Aperture Radar) Image Processing package.

N. A. Software Ltd is an ISO 9001 certified company located on Merseyside in the UK. For more information visit [www.nasoftware.co.uk](http://www.nasoftware.co.uk),

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