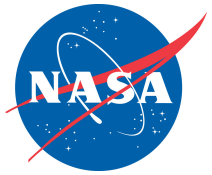

NASA LWS Institute GIC Working Group: GIC science, engineering and applications readiness

Antti Pulkkinen (NASA Goddard Space Flight Center)
and the LWS Institute GIC Working Group

NASA LWS Institute concept

- Space weather version of the International Space Science Institute (ISSI).
- End-user focus, which is really good → basic scientific research feeding into applications addressing the hazard.
- Our goal was to establish the full systems science view of GIC.

"ARLs, similar to TRLs, are not meant to measure the performance of individual models or tools but to quantify their readiness for use in decision making context. It should also be noted that ARL 9 does not mean that —the job is done. While there may be ARL 9 applications that have been in sustained used in a specific decision-making context, there can be significant room for improving the quality and performance of those applications." (*Pulkkinen et al.*, 2017)

Geomagnetically induced currents: science, engineering and applications readiness

Pulkkinen, A.[1], E. Bernabeu[2], A. Thomson[3], A. Viljanen[4], R. Pirjola[4,5], D. Boteler[5], J Eichner[6], P. J. Cilliers[7], D. Welling[8], N.P. Savani[9], R.S. Weigel[20], J.J. Love[10], C. Balch[11], C. M. Ngwira[12,1], G. Crowley[13], A. Schultz[14], R. Kataoka[15], B. Anderson[16], D. Fugate[17], J.J. Simpson[18], M. MacAlester[19]

[1]NASA Goddard Space Flight Center, USA.

[2]PJM, USA.

[3]British Geological Survey, UK.

[4]Finnish Meteorological Institute, Finland.

[5]Natural Resources Canada, Canada.

[6]Munich-Re, Germany.

[7]South African National Space Agency, South Africa.

[8]University of Michigan, USA.

[9]University of Maryland Baltimore County, USA.

[10]U.S. Geological Survey, USA.

[11]NOAA Space Weather Prediction Center, USA.

[12]The Catholic University of America, USA.

[13]Atmospheric & Space Technology Research Associates, LLC, USA.

[14]Oregon State University, USA.

[15] National Institute of Polar Research, Japan.

[16]JHU Applied Physics Laboratory, USA.

[17]Electric Research and Management, Inc., USA.

[18]University of Utah, USA.

[19]Federal Emergency Management Agency, USA.

[20]George Mason University, USA.

Corresponding author: Antti Pulkkinen (antti.a.pulkkinen@nasa.gov)

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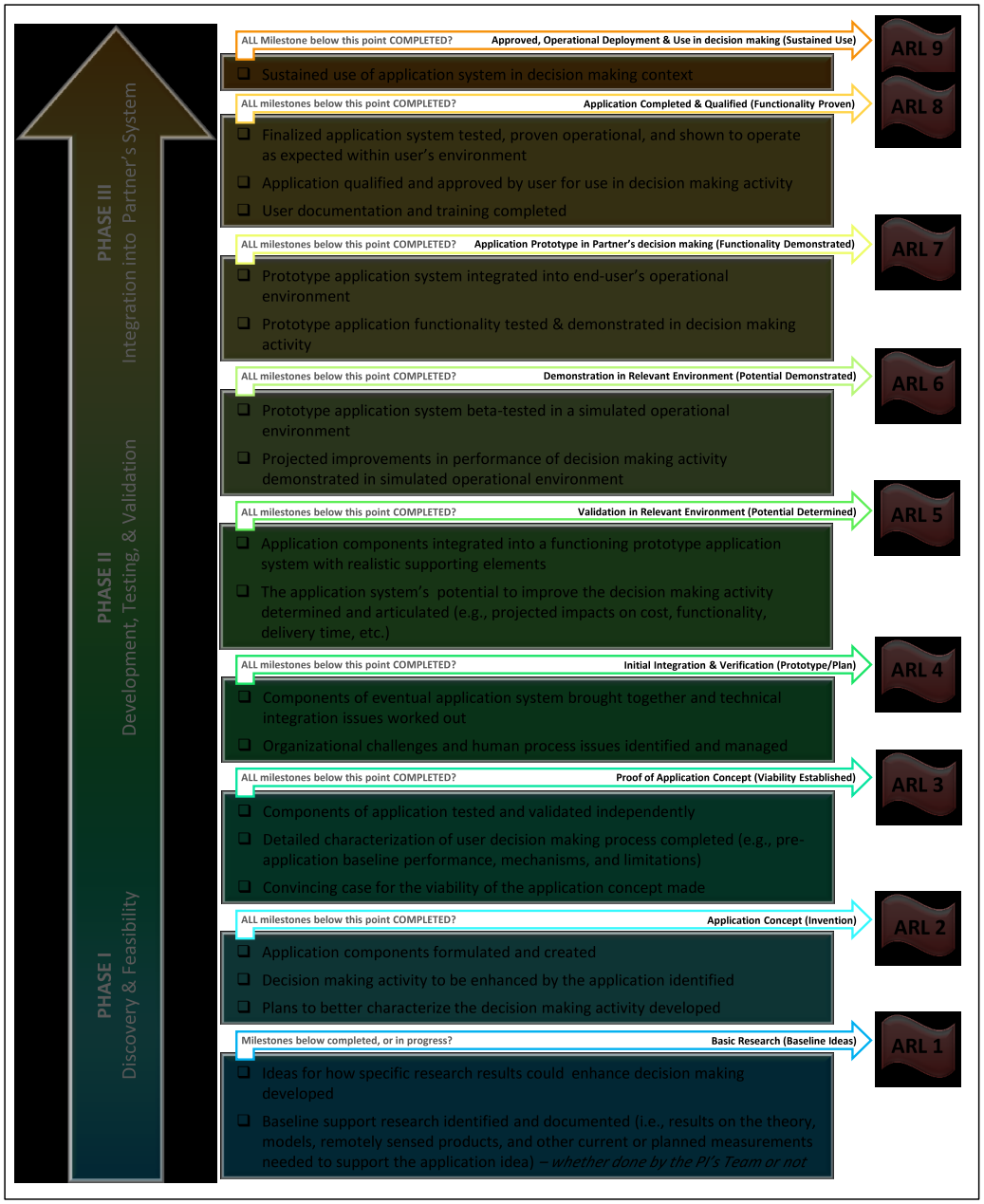
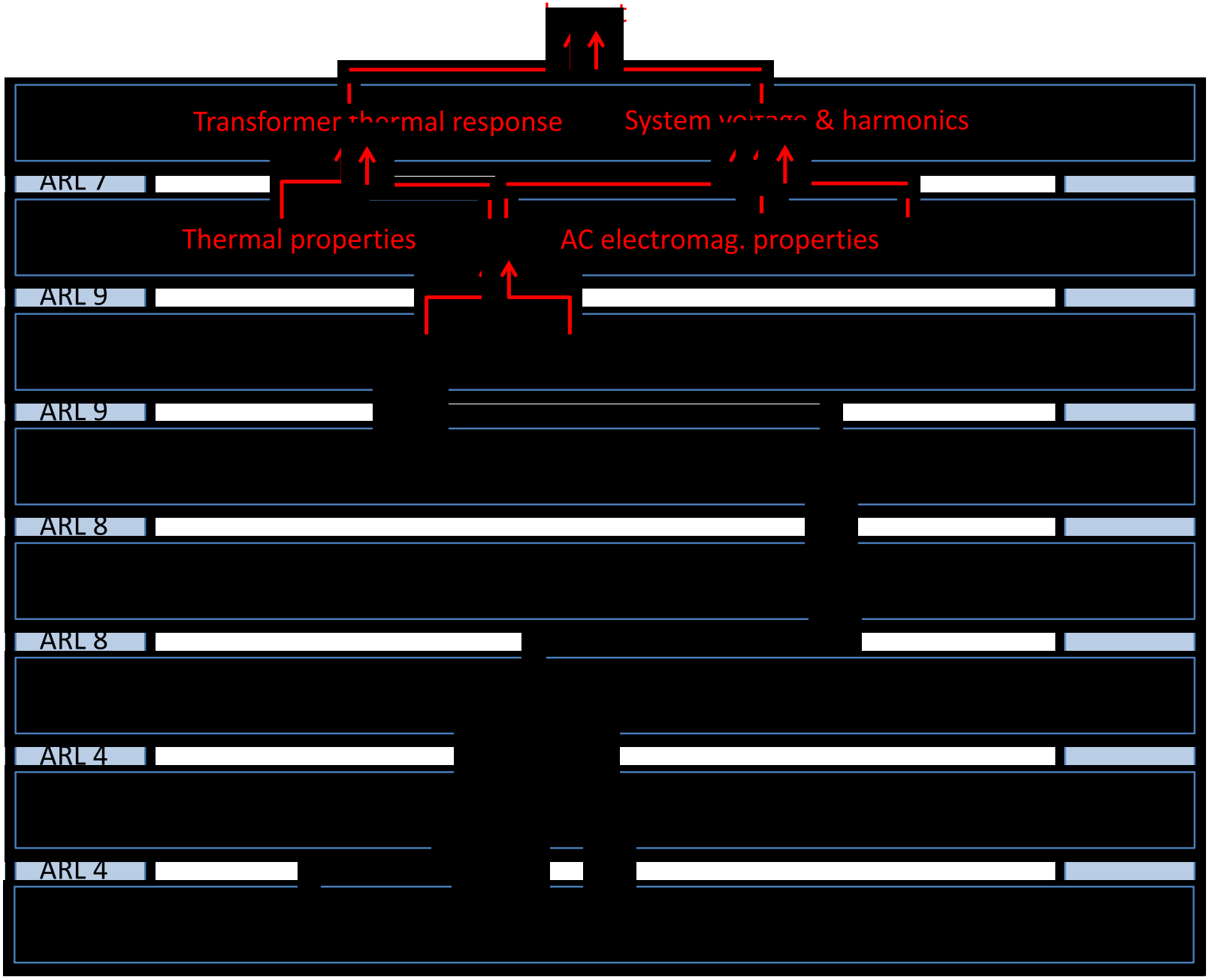


NASA Application Readiness Level (ARL) Milestones. Progression of NASA Applied Sciences projects is represented vertically (y-axis). While some projects may complete some milestones out of phase with this upwards vertical progression, the ARL for each project is determined at any given time by completion of all milestones that come below it in this illustration.



Pulkkinen et al. (2017, *Space Weather Journal*)

SWJ Special Collection

- LWS Institute GIC Working Group is in the process of publishing AGU Space Weather Journal (SWJ) Special Collection
  - Most papers already published.
  - Overview paper and 8 detailed technical contributions.