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Memorandum

AAST

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– A Scholarly Peer-Reviewed Open Access Journal –

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Dieter Scholz¹

Design of AAST's Title Page

The AAST title page consists of:

1. NASA's picture "City Lights of Asia and Australia"
2. Two aircraft from the Aircraft Design and System Group (AERO) headed by Prof. Scholz from Hamburg University of Applied Sciences
3. Elements from a graphics program

NASA's picture "City Lights of Asia and Australia"

"City Lights of Asia and Australia" is part of NASA's catalog of images and animations of our home planet.

"This image of Asia and Australia at night is a composite assembled from data acquired by the Suomi NPP satellite in April and October 2012. The new data was mapped over existing Blue Marble imagery of Earth to provide a realistic view of the planet. The nighttime view was made possible by the new satellite's "day-night band" of the Visible Infrared Imaging Radiometer Suite. VIIRS detects light in a range of wavelengths from green to near-infrared and uses filtering techniques to observe dim signals such as city lights, gas flares, auroras, wildfires, and reflected

¹ Editor-in-Chief, AAST

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moonlight. In this case, auroras, fires, and other stray light have been removed to emphasize the city lights.” (NASA 2013a)

Credit for this picture goes to NASA Earth Observatory image by Robert Simmon, using Suomi NPP VIIRS data provided courtesy of Chris Elvidge (NOAA National Geophysical Data Center). Suomi NPP is the result of a partnership between NASA, NOAA, and the Department of Defense. Caption by Mike Carlowicz (NASA 2013a).

NASA’s terms of use are (NASA 2013b):

For all non-private uses, NASA's Terms Of Use are as follows:

- The imagery is free of licensing fees
- NASA requires that they be provided a credit as the owners of the imagery

Visible Earth Addendum (NASA 2013b):

Beyond the NASA Terms, the Visible Earth team requests, but does not require:

- The Visible Earth be provided a credit as the location that the imagery was found at
- A URL be provided, either to the Visible Earth (<http://visibleearth.nasa.gov/>) or to the page providing the link to the used image.

Two Aircraft from AERO

The aircraft in the foreground is a box wing aircraft. It has two pairs of wings on top of each other. Seen from the front the wings form a box. Seen from the top the wings form a diamond. The wing tips are connected by winglets. The upper wing is attached to a V-shape vertical tail which gives the aircraft yaw control. Pitch control is provided by control surfaces on the wing. The configuration is known for its low induced drag. The more the wings are vertically separated the lower the induced drag. The box wing achieves the low induced drag with a moderate span (compared to a conventional wing). This fact makes the box wing superior at airports with their limited space for aircraft.

The aircraft in the background is called “Smart Turboprop”. It saves fuel with its large diameter propellers. The wing is supported by struts. This gives the aircraft a further weight advantage.

Both aircraft have been designed in the frame of the research project “Airport2030” (Scholz 2013). The use of the picture requires the research group being named and a link provided to <http://AERO.ProfScholz.de>.

Design of the Picture

The picture was inspired by Dieter Scholz and produced by Ricardo Caja Calleja. Further graphic elements were added with a graphics program. The sun and the rays are added. The halo around the earth is part of the original NASA image. For the design the file “city_lights_asia_night_8k.jpg” with

8192 x 8192 pixels was used, a JPEG with 4 MB. NASA also offers “city_lights_asia_night_8k.tif” with a TIFF with 28 MB. This resolution did not fit to the lower resolution with which the aircraft could be provided. Therefore, the higher resolution of the TIFF was of no use for this application. The title page was designed to SCIRP’s layout rules according to the AAST template with a size of 21 cm x 28.5 cm. This is not just as tall as A4 (21 cm x 29.7 cm). The resulting title page has a resolution of 2850 x 3867 pixels and about 3 MB. Figure 1 give an indication of the result.

For the different use cases at AAST/SCIRP different JPEG can be provided:

- an icon 130 x 177 pixels with the picture as described and the title of the journal,
- an icon 130 x 177 pixels with the picture as described, the title of the journal and an indication of a header line and the SCIRP icon (not really visible due to the low resolution)
- a version larger than the icon with e.g. 428 x 580 pixels for generic use on the Internet (Figure 1)
- just the picture without AAST title and without header for the regular production by SCIRP of “Cover Page, Table of Contents and Others: PDF” in the resolution of 2850 x 3867 pixels.



Figure 1: AAST’s title page (as of May 2013)

References

NASA, 2013a. City Lights of Asia and Australia, 2013 [cited 2013-05-16]. Available from: <http://visibleearth.nasa.gov/view.php?id=79790>

NASA, 2013b. General Terms of Use Information, 2013 [cited 2013-05-16]. Available from: <http://visibleearth.nasa.gov/useterms.php>

SCHOLZ, Dieter, 2013. Airport 2030 - Work Package 4.1: Evolutionary Aircraft Configurations, 2013 [cited 2013-05-16]. Available from: <http://Airport2030.ProfScholz.de>