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Evolution and Broadening of the National Analysis Facility at DESY

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The National Analysis Facility at DESY has been in production for nearly 15 years. Over various stages of development, experiences gained in continuous operations have continuously been feed and integrated back into the evolving NAF. As a “living” infrastructure, one fundamental constituent of the NAF is the close contact between NAF users, NAF admins and storage admins & developers. Since the NAF is used by a wide field of physics groups and users with different levels of expertise, the social component has shown to be more crucial for the operations and success of the NAF as large scale tool for science compared to plain technology.

While the NAF’s focus has been on HEP communities and their workflows, the NAF itself is part of the more comprehensive Interdisciplinary Data and Analysis Facility (IDAF) at DESY. ((As an example beyond HEP for emerging user communities from light particle or photon physics,)) the ALPS II experiment has chosen the NAF as their reconstruction and analysis infrastructure. The Any Light Particle Search II (ALPS II) experiment itself is a light-shining-through-a-wall (LSW) experiment based at DESY in Hamburg, Germany, that will search for axions and axion-like particles down to the coupling of the axion to two photons for masses below 0.1meV. With an eager but limited team, ALPS is focused on the physics exploitation with little overhead available for generic computing tasks.

While the computational needs of the ALPS experiment are on a smaller scale than, e.g., the LHC experiments, unspecific data processing tasks like managing computing, storage and data management for online data taking, long term storage, and analyses still need to be handled. Utilizing the experiences from experiment data handling and processing, ALPS II and DESY IT collaborate to offload generic tasks from the scientists and establish a blueprint for other experiments as well. Eyeing for their scientists needs, the ALPS team and DESY IT have been collaborating in establishing modern tools and approaches like concentrating on CI/CD pipelines and flexible storage access methods.

On the administrative side, with a broadening user community an increased focus on security has become paramount. Since an Analysis Facility presents a large attack surface due to the large number of users with varying experiences and backgrounds, hardening an AF has to be one of the core design and operations aims. In addition to the user support view, we will present as well hardening measures taken over the past two years and our future plans for keeping the NAF secure.

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