

HPC-SIG Proposal

**E²SAS: Starting point – possible
plan of action**



November 2021

HPC-SIG proposal EPSRC Tier-2 call (Q3/2019) “E²SAS”

- E²SAS (Environment for the Enhancement of System Administration Skills) strong impact agenda encompasses knowledge, people, society and economy, with **outreach and training** central to the proposal.
- £Billions internationally invested in UK in technology start ups
- Increasing diverse research domains and complexities of workflows conducted on research computing services – main stream solutions.
- Acknowledgement: **skilled workforce to run these services is dwindling**, in stark contrast to the capital investment in technology.
- Globally academia and industry are continually struggling to recruit staff into these roles – often citing a **lack of talented individuals / continually recruiting from the known existing sources** (fishing in the same talent pool exhausting supplies!) – **QUOTA EXCEEDED?**



- Discussions within the HPC-SIG have identified this failure to **invest in fostering the next generation of system administrator** as a major risk given how mainstream research computing has become.
- E²SAS proposed a foundation **framework** to act as a focal point for outreach to foster the community and align these activities with **existing initiatives to encourage the next generation** of technical support staff.
- Opportunity to review the skills and job descriptions (clear **role definition and consistent terminology**), establishing a core set of best practice training material and mentorship schemes (**industry recognized accredited engineers standards**)
- **promote** the diversity of opportunities associated with running research computing facilities.
- strong presence in related **public engagement and dissemination events.**



1. **Foundation/focal point to address current under-investment** in system administration / service provision, foster & promote opportunities to new generation
2. Cannot address all issues simultaneously – intention to **establish foundation framework** that can align and complement existing initiative and activities to maximize impact and allow expansion as initiatives evolves.
3. Replicate success through EPSRC's leadership investment in RSEs to start to **address career pathways and removing perceived barriers** to ensure continue to evolve services to meet research challenges
4. **Partnership and co-development environment** for academia, suppliers, and public to collaborate to ensure best practices are adopted to address the lack of recognized skilled workforce impacting the entire community



BETTER SERVICES, BETTER RESEARCH

Service excellence as important as software development – without investment in ensuring optimal environment, software development not reach full potential!

Right direction, not optimal call – important to ensure issue escalated

Significant support – over 15 Letters of Support from European Centres, Industrial suppliers, and HPC-SIG committee institutions – genuine enthusiasm to jointly address the skills shortage challenge.

Opportunity to build on this initial engagement piece to start to develop a template proposal – requires **dedicated effort to drive forward**, cannot be achieved under a ‘best endeavours’ activity.

Community buy-in essential - to agree the core skills and processes – technology agnostic approach – basic competencies agnostic to solution – identify methodologies and principles core to building the next generation.

Proposed in 2019 – **progress since?**



Foundation underpinning UK e-Infrastructure given its strategic goal of knowledge transfer and upskilling the next generation of service providers - enhancing the **productivity of present and future HPC services**.

Recognised skills shortage at a national and international level by seeking to attract the next generation of system administrators to the opportunities associated with running research computing facilities.



Key opportunities identified by E²SAS include:

- **Raising awareness of opportunities within system administration.**
- **Co-development** in evaluating software tools to meet the challenges
- **Adoption by HEIs and Suppliers** – apprenticeship schemes to provide evaluation opportunities prior to committing to future career paths.
- Provision of training into **return to work programmes and developing an environment to foster under-represented communities** to develop skills.
- Establish UK as recognized source of **talented and accredited** skilled workforce – **career pathways**.
- **Skills refresh** for both academia and technology suppliers