#### **Digital Services Technical Specialist (Systems)**

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| JOB IDENTIFICATION |
| Job Title: Technical Specialist (Systems)Responsible to: Senior Technical Specialist (Systems)Department(s): Digital Services Directorate: Department of Information and Clinical Support ServicesOperating Division: Digital ServicesJob Reference:No of Job Holders: 6Last Update: 29th July 2024 |

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| 2. JOB PURPOSE |
| To be responsible for the operation, maintenance, management and performance of the Organisation’s information systems ensuring their integrity, security and availability in order to meet the Organisation’s information requirements for the efficient operation of their business.To maintain, develop and adapt existing systems, applications and interfaces and to assist in the technical implementation of new applications and interfaces.To provide a Digital Services resource to senior managers and consultants for the extraction of data from clinical systems and the design and production of statutory and ad-hoc reports.To provide expert technical advice, support and technical training to Digital Services staff and system users. |

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| **3. DIMENSIONS** |
| Provides application support, maintenance, upgrade, problem resolution, technical advice and development services to:* All GP practice users (59 practices)
* Users at Community based clinics
* Users at all Ayrshire & Arran hospitals/clinics
* Users based at Out of Hours services across Ayrshire & Arran

Provides proactive monitoring and support of approximately 1000 servers, monitoring performance and reliability of approximately 350 systems across a user base of some 14,000 users and 8000 client PC’s.Provide advice and support on a wide range of complex technologies and systems to a wide target audience.Represent NHS Ayrshire & Arran Digital Services Department on local and national technical groups. |

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| 4. ORGANISATIONAL POSITION |
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| 5. ROLE OF DEPARTMENT |
| Deliver effective operational Knowledge Management & Digital Services across NHS Ayrshire & Arran, based on the application of new technologies and effective ways of working, to support and enable the modernisation of services. Develop the technical infrastructure (servers, desktops, local and wide-area networks) to enable the sharing of information and knowledge across NHS Ayrshire & Arran in a secure managed environment. Define, promote and lead the development and deployment of a Knowledge Management and Digital Services strategy, within and beyond NHS Ayrshire & Arran. Develop and extend information literacy across the organisation by developing information sources, extending access and ensuring that appropriate training and development programmes are provided for staff throughout NHS Ayrshire & Arran. Provide support and professional advice on Information Technology; Information Management; Health Intelligence; Library Services; Knowledge Management, Data Protection and Information Governance. |
| 6. KEY RESULT AREAS |
| * Deal with highly complex technical incidents using specialist knowledge and expertise ensuring that service is resumed to the end user and that the underlying problem is dealt with.
* Ensure appropriate licensing arrangements are in place for all information systems with appropriate supporting documentation which must be up to date.
* Ensure that system information and troubleshooting documentation is created and kept up to date and made available to other teams within the Digital Services department and to on-call Digital Services staff.
* Administer the Organisation’s application software ensuring that appropriate access controls are in place, reporting any inappropriate access or security compromise to the Digital Services Security Team. Ensure the security of data within managed systems and adhere to organisational policies and procedure on the safe storage and transportation of data to and from third parties.
* Collaborate with the Digital Services Infrastructure Team to ensure that system specification, capacity planning and network requirements are understood and acted on appropriately.
* Collaborate with the Digital Services Infrastructure Team to ensure that appropriate backup routines are established for all information systems and that they are regularly tested.
* Identify data quality issues, alerting system owners and ensuring that the cause is identified and resolved
* Contribute to Business Continuity Planning and Digital Services disaster recovery planning by identifying information systems that are critical to the business processes of the Organisation. Ensure that risks to those systems' availability, integrity and confidentiality are identified and assessed.
* Co-ordinate and implement application software upgrades, patches and bug fixes to SLA’s agreed with the business. Create appropriate ITIL change request documentation to communicate the details of the change to the wider Digital Services community, managing supplier delivery of new releases and documentation, collaborating with service users and suppliers to facilitate upgrade timings and manage the change.
* Develop, maintain and monitor interfaces between systems, ensuring timely and accurate flow of information.
* Analyse and interpret complex information from users to ensure that user requirements are met within software systems.
* Analyse and define user requirements in order to extract data and create reports from software systems to meet those requirements.
* Analyse and interpret user requirements for collection of data and design and provide suitable methods for the user to collect this data.
* Design, develop and configure software to meet specifications ensuring that the needs of the users are met, and that local and national strategies are delivered.
* Proactively monitor system performance using own expertise and software monitoring tools to ensure data consistency and availability, performing preventative maintenance procedures where required to prevent future incidents.
* Ensure appropriate database level and system backups are being created and made available for central backup.
* Act as a technical expert and 3rd line escalation point for complex incidents generated within other teams within the Digital Services department.
* Create and manage deployment packages using remote software deployment technologies to distribute software to client PC’s.
* Apply security patches for both operating systems and software applications in line with the organisations security patching policy. Maintain records of patches applied.
* Represent the Organisation by maintaining effective and constructive relationships with internal customers, system suppliers and other NHS bodies concerned with systems support.
* Represent the team at technical meetings and workshops at local or national level, providing guidance and a technical advisory service in all aspects of Digital Services, ensuring that department guidelines and polices are followed and representing the Digital Services needs of the department to ensure informed decision making.
* Assist in the provision of data migration services for systems
* Participate where required in out of hours emergency on-call service to provide support for critical systems, ensuring 24x7 availability
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| 7a. EQUIPMENT AND MACHINERY |
| The post-holder will require extensive knowledge of:* IT Hardware Technologies including but not exclusive to:
	+ Server Platforms (Linux and Windows based) both physical and virtual to host systems and applications
	+ Wireless Technologies
	+ Desktop Hardware (Laptops / PC Base Units) on which applications are executed
	+ Routers and Switchgear which enable communications between desktop hardware and server platforms
	+ Printers which provide printed output from systems and applications
* The post-holder requires a clean, current driving licence
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| **7b. SYSTEMS** |
| The post-holder will require proven working knowledge of the following software systems and technologies:**Database technologies** used for storing data used by systems and applications:* Microsoft SQL Server versions from 2000 to 2022
* Intersystems Cache
* Microsoft Access
* MySQL

**Web standards and technologies** used to design, create and host web-based systems, interfaces and applications:* Microsoft ASP .NET application framework for technical support of web applications, services and sites
* Microsoft Visual Studio integrated development environment
* Microsoft .NET framework – client and server-side code library
* Microsoft IIS for server-side management and hosting of applications
* Apache HTTP server for server-side management and hosting of applications
* XML technology for storing and transporting data
* HTML for displaying data and information on a web page
* Web Services to allow communications between systems
* SOA – Service-oriented Architecture

**Operating System Software** runs on server and desktop/laptop hardware and hosts applications and systems:* Microsoft Windows 7/10,11, Server Versions from 2003 to 2022
* Linux RedHat 7/8/9 & Binary compatible distros like Centos / Almalinux / Rocky

**Reporting and data extraction software** for producing reports and extracting data from other systems for analysis:* Crystal Reports
* Business Objects XI
* SSIS (SQL Server Integration Services)
* SSRS (SQL Server Reporting Services)

**System integration and interfacing** for creating and maintaining interfaces for transfer of data between disparate systems:* Intersystems Ensemble for design, creation and maintenance of interfaces which transport and transform data between different and disparate systems and formats

**National and regional systems and applications** used nationally across multiple health board areas within NHS Scotland: and managed locally by the post-holder:* Intersystems Trakcare PMS (Patient Management System) used as the main patient administration system and based on Cache database technology hosted on Linux
* Soliton RIS / PACS – National Radiology system
* SERPR – Regional renal system
* CEPAS – Chemotherapy prescribing system
* Opera – Theatres management system
* SCI Store – Patient demographics and results storage
* SCI Gateway – transfers referrals and documents electronically
* SCI DC – Diabetes system
* ECS – Emergency Care Summary

**Systems used in day-to-day communication, system management, management of workload and research:*** Microsoft Office Suite (Word, Excel, Access, Outlook)
* Edge
* Remote desktop and other remote connection systems
* Service Now - Digital Services Call logging system
* Microsoft Sharepoint
* Database management tools
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| 8. ASSIGNMENT AND REVIEW OF WORK |
| **Assignment**Work is generated directly from the following:* Client groups, by way of requests for assistance, application/system development, data auditing and analysis. This may take the form of one-to-one communication or as a result of attending multi-disciplinary/project groups, by means of formal meetings, verbal request (meeting or telephone) or by written request (email, letter)
* Other teams within the department due to requests for assistance or advice on Digital Services systems, projects, equipment
* The Senior Application Support Specialist and Digital Services Head of Systems and Development
* Calls logged on the Digital Services Service desk system.
* Out-of-hours Digital Services on-call critical systems support service.

Work is generated as an outcome of established system management or data analysis routines.Tasks involved in preventative maintenance of systems and pro-active planning are generated directly by the post holder.Work may be generated as an outcome of new legislation or policies/procedures.**Review**The post holder works autonomously on a day-to-day basis.The post holder reports progress of work undertaken within assigned projects, to the Senior Application Support Specialist and/or Head of Digital Services Systems and Development, at regular review meetings.Progress of work generated by client groups is reviewed in the form of one-to-one communication with the requestor, or by feedback/review at project group or team meetings.Progress of workload is reviewed on an ad-hoc basis by the Senior Application Support Specialist and the Head of Digital Services systems and Development, during direct informal meetings and through formal annual Performance Development Plans. |

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| **9. DECISIONS AND JUDGEMENTS** |
| The post holder is expected to assess and analyse often complex and difficult Digital Services system problems or desired system developments, before recommending and/or providing appropriate and effective solutions to satisfy the client’s business requirements.The post holder is expected to anticipate issues and/or problems and be able to work on their own initiative and resolve them independently.The post holder has autonomy to: * Accept work requests direct from clinical and business managers, individual clients and other teams within the Digital Services department
* Allocate, prioritise, plan and action own workload
* Organise and implement system upgrades and/or enhancements, co-ordinating with and advising clients on system availability or planned downtime
* Organise and obtain resource through liaison with the Digital Services Infrastructure and Desktop Support team leaders, or with external suppliers/contractors or service providers
* Troubleshoot and make decisions using own initiative on critical Digital Services system problems encountered outside normal working hours during on-call rosters

Within the emergency out-of-hours on-call roster, the post holder has the authority, when working on one call and receiving further call(s), to prioritise the calls based on the immediate service needs of the clients, as well as to defer calls that are deemed to be non-critical. |

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| 10. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB |
| Responsibility for supporting a demanding user base, often at times which are stressful for the user. Expected to be rational and efficient when dealing with difficult situations and expected to display a high level of communication skills and diplomacy during stressful incidents.Expected to support systems outside the normal hours of business, which may mean remaining on-site or being on call throughout the night and being under extreme pressure to fix critical clinical systems under their own initiative and with no escalation procedure available.Expected to articulate complex problems and issues to management and peers in both verbal and written communications and may, at times, be asked to present findings to a committee or board.Expected to remain up to date with technological advances and supply either a written or verbal report on possible updates and upgrades to systems and applications.Expected to be a self-motivating individual who can adapt quickly to changes in the business environment.Expected to prioritise and multi-task a variety of planned and unpredictable complex system related activities, often within tight timescales, within a demanding and constantly changing environment. |

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| **11. COMMUNICATIONS AND RELATIONSHIPS** |
| Communications may take the form of personal contact (formal or informal meetings), written contact (letter, email), telephone, pager or mobile phone or via help desk management system. The capability to demonstrate excellent inter-personal qualities is a prerequisite, as is the ability to convey highly complex technical information in a non-technical format suitable for a wide audience.InternalThe post holder will be expected to liaise with and work in conjunction with Digital Services staff at all levels, senior clinical staff, technical, administrative and clerical staff at all levels within NHS Ayrshire & Arran, Heads of Departments, Clinical Service and Business Managers and will involve:* Contact with clients to ensure that they are kept informed with up-to-date information at all stages of a problem resolution in a manner that is understandable
* Ensuring that clients are involved in all stages of developmental projects and advised of options and decisions in a manner that is understandable
* Contact with clients to ensure that their Digital Services system requirements are in step with departmental and organisational objectives and policies, and make changes where appropriate and as necessary
* Negotiating with clients regarding the priority of their request, based on other current priorities
* Contact with clinical and non-clinical staff at all levels in order to provide advice, guidance, support and development of organisational Digital Services systems
* Writing of non-technical and comprehensive Digital Services system user guides
* Using diplomacy and influence to drive change in clients attitudes to Digital Services

ExternalExternal liaison will include working and negotiating with IS and technical staff at other NHS organisations, IT support consultants and project managers within 3rd party systems companies, ISD staff and hardware and software supplier sales and technical staff. |

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| **12. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB** |
| **PHYSICAL EFFORT/SKILLS:**The post is primarily sedentary and requires the constant use of computers. This can lead to eye strain, back, shoulder and wrist problems, due to working in restricted position. Intense periods of time spent producing and reading complex system documentation etc. can also lead to eye strain and posture problems.Proficient keyboard skills with a high degree of accuracy are essential.Due to the multi-site operational environment of the post within NHS Ayrshire & Arran, as well as travelling to meetings/presentations within other geographical areas, driving is a regular part of the job, therefore a driving license and use of a car is essential.Lifting and handling of computer equipment (for example, monitors, base units, laptops, printers) is carried out occasionally and can involve stairs, as office accommodation is above ground floor in a building where no lifts are available.**MENTAL EFFORT/SKILLS:**The post holder is frequently required to concentrate in order to assimilate Digital Services and Data requirements quickly and accurately so as to determine technical direction and provide guidance and effective solutions to suit client’s operational requirements. Frequent interruptions, during these intense concentration periods, can make this work more difficult and frustrating.The mental effort can be considerable and yet varied over prolonged or short periods depending on the nature of the problem being investigated / analysed and the timescale dictated by clinical pressure or project deadlines. Report preparation taking into account technical details explained in layman’s terms is also an essential skill.The post requires the ability to multi-task on a continuous basis. Interruptions are frequent and the daily work pattern can be very unpredictable. Demands made by clients require constant re-assessment and re-prioritisation of workload. This can be extremely intense and emotionally draining as each client views their own issues as being the most important.Excellent communication skills are essential in spoken and written work.EMOTIONAL EFFORT/SKILLS:The post holder is required to be a professional IM&T expert and demonstrate this service against conflicting priorities for healthcare professionals directly delivering patient care.Having to deal with frustrated and irate clients when system failures and disruptions occur and pressure from them to resolve problems rapidly within short timeframe or having to explain to clients why data has been lost or corrupted, requiring repetition of work they have already completed or requiring alternative, often less-efficient workarounds until problem can be resolved.Within the emergency on-call participation there is a constant emotional pressure of having sole responsibility to troubleshoot and successfully resolve any faults or service interruptions to the critical organisational Digital Services systems, often being harassed by frustrated and demanding users. Calls received during these weekly on-call periods (covering 5pm-9am Mon-Fri, all day Sat, Sun and Public Holidays) may require the post holder’s attendance on site, often late at night/early hours of morning and for long periods on top of a normal working day. There can be a requirement to balance multiple calls from clients for assistance and, in addition, field calls from irate users where, due to the nature and the seriousness of the problem, and with no onward technical escalation path, there is unlikely to be a successful conclusion without recourse to assistance from colleagues or from a 3rd party support company.Demands to work outside normal hours to accommodate clinical/business areas and minimise impact on patient care or business functionality, for example when upgrading or performing preventative maintenance on the hardware or application software. Occasionally a requirement to work in areas (ward areas, A&E) where patients are treated and encountering patients who are themselves in an emotional/stressed or angry state.ENVIRONMENTAL CONDITIONSPost holder may be required to enter locations housing Digital Services equipment, be it under dirty desks, in ‘clean’ theatre areas, noisy and cold computer rooms.Occasionally a requirement to work in areas where post holder is exposed to body fluids, communicable diseases i.e., ward areas, theatres. |

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| 13. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB |
| Minimum required qualifications and experience to undertake the role are:* Relevant Degree qualification in technical IM&T related discipline or proven experience in a relevant IM&T discipline
* A technical hardware and software background is essential for the delivery and support of major system applications and related hardware (servers and peripherals), along with highly developed specialist knowledge and experience of database systems.
* Experience of web-based systems and methodologies
* Experience of communication to disparate audiences
* Experience of working unsupervised in a complex, rapidly changing environment

Desirable* ITIL training (or working towards)
* Project Management Experience or training
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