Digital Curation Unit
IMIS - Athena Research Centre

NeDiMAH
Network for Digital Methods in the Arts and Humanities

NeMO - NeDiMAH Methods Ontology

Oxford ICT – NeMO mapping

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Oxford ICT – NeMO mapping

The following tables provide a mapping from terms of the Oxford ICT taxonomy onto terms of the NeMO ActivityTypes taxonomy. The prefixes O_ and N_ are used to denote Oxford ICT and NeMO terms respectively.

Key: NT = narrower term, BT = broader term

Oxford ICT	Relation	NeMO	Oxford Scope Notes	NeMO Scope Notes
O_Communication and Collaboration	BT	N_2 Communicating	Communication and Collaboration: Ways of working with your fellow researchers, both locally and at a distance, such as video conferencing or sharing electronic documents.	Communicating refers to the Activity Type of exchanging ideas with other people, primarily, but not exclusively, using linguistic means.
O_Collaborative interaction	NT	N_2.1 Collaborating		Collaborating refers to the Activity Type of working jointly on an activity or a project. This can be achieved by several researchers, possibly in different places and at different times. Research-oriented collaboration is enabled, particularly, through comprehensive Digital Research Environments, but can also happen around more specific activities, such as communication or sharing of resources.
O_Audio interaction (asynchronous)	NT	N_2.1.9 Resource Sharing	Audio interaction (asynchronous): Sharing ideas and working collaboratively by listening to and editing recorded messages / music etc. that have been placed in a mutual workspace for download at the collaborators' convenience.	Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.

O_Audio-visual interaction (synchronous)	NT	N_2.1.10 TeleConferencing	Audio-visual interaction (synchronous): Real-time communication using video-conferencing and/or audio communication over a computer network, perhaps using a tool such as Voice Over IP.	Teleconferencing refers to the Activity Type of live exchanging information and communicating with other participants in different locations but linked by a telecommunications system.
O_Graphical interaction (asynchronous)	NT	N_2.1.10 TeleConferencing	Graphical interaction (asynchronous): Sharing concepts / ideas by editing still images, plans, diagrams etc in shared, online workspaces that allow collaborators to view and adapt the work in there own time.	Teleconferencing refers to the Activity Type of live exchanging information and communicating with other participants in different locations but linked by a telecommunications system.
O_Graphical interaction (synchronous)	NT	N_2.1.10 TeleConferencing	Graphical interaction (synchronous): Working upon a shared image / plan / diagram collaboratively in real time using a shared image manipulation application.	Teleconferencing refers to the Activity Type of live exchanging information and communicating with other participants in different locations but linked by a telecommunications system.
O_Textual interaction (synchronous)	NT	N_2.1.10 TeleConferencing	Textual interaction (synchronous): Two-way textual communication in real time- for example using Internet chat software.	Teleconferencing refers to the Activity Type of live exchanging information and communicating with other participants in different locations but linked by a telecommunications system.
O_Textual interaction (asynchronous)	NT	N_2.1.9 ResourceSharing	Textual interaction (asynchronous): Communication using text that occurs in one-direction only- for example using an online bullentin board or document store.	Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.

O_Video-based interaction (asynchronous)	NT	N_2.1.9 ResourceSharing	Video-based interaction (asynchronous): Non-real-time communication and collaboration involving the viewing and editing of digital video uploaded to a collaborative workspace (perhaps in MPEG format).	Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.
O_Resource sharing	NT	N_2.1.9 ResourceSharing	Resource sharing: Provision of audio, textual, video and graphical data on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.	Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.
O_Data Analysis	NT		Extraction of information, knowledge or meaning from a digital resource, using techniques such as searching and querying or feature measurement.	
O_Audiovisual analysis				
O_Image feature measurement	NT	N_4.1.20 Measuring	Image feature measurement: Image feature measurement is a term to describe techniques used to acquire, measure, and analyze the parameters of digital images, such as size, shape, relative locations, textures, grey tones and colors. These parameters are also known as ‘perception attributes’.	Measuring refers to the Activity Type of ascertain the size, amount, or degree of (something) by using an instrument or device marked in standard units.

O_Image segmentation	NT	N_4.3.16 Partitioning	Image segmentation: Segmentation refers to the process of partitioning a digital image into multiple segments, also known as superpixels. The goal of segmentation is to simplify and/or change the representation of an image into something that is more meaningful and easier to analyze.	Partitioning refers to the Activity Type of dividing something into parts. In Computer Science, Disk partitioning is the act of dividing a hard disk drive (HDD) into multiple logical storage units referred to as partitions, to treat one physical disk drive as if it were multiple disks, so that a different file system can be used on each partition.
O_Sound analysis	NT	N_4.1 Analyzing	Sound analysis: Refers to the extraction of information and meaning from sound signals for classification, storage, retrieval and synthesis. Different types of sound, for example voice and music, can be analyzed in different ways.	Analyzing refers to the Activity Type of extracting any kind of information from data, of discovering recurring phenomena, structures, groupings, and the like.
O_Searching and linking				
O_Content-based image Retrieval	NT	N_5.7 Retrieving	Content-based image retrieval: Content-based image retrieval (CBIR) refers to techniques used to search for digital images by features of their content, which is particularly helpful when studying large databases. It is often preferable to perform searches relying on metadata, which can be expensive and time-consuming to produce, as it requires humans to describe each individual item in the database.	Retrieving refers to the Activity Type of structured searching in a large collection of data items (such as individual texts or images) for a specific subset of these data items according to specific criteria.

O_Content-based sound Retrieval	NT	N_5.7 Retrieving	Content-based sound retrieval: Refers to techniques used to search for sound files by features of their content, using specialist software, which is particularly helpful when studying large databases. It is often preferable to perform searches relying on metadata, which can be expensive and time-consuming to produce, as it requires humans to describe each individual item in the database.	Retrieving refers to the Activity Type of structured searching in a large collection of data items (such as individual texts or images) for a specific subset of these data items according to specific criteria.
O_Data mining	NT	N_5.3 Data Mining	Data mining: Data mining is the process of using computing power to extract hidden patterns from data, analyzing the results from different perspectives and summarizing it into a useful format, such as a graph or table. This process is often facilitated by the use of metadata. It is important that any patterns found are verified and validated by comparison with other data samples. In this way, data mining can identify trends that go beyond simple data analysis.	Data Mining refers to the Activity Type of using computing power to extract hidden patterns from data, analyzing the results from different perspectives and summarizing it into a useful format, such as a graph or table. This process is often facilitated by the use of metadata. It is important that any patterns found are verified and validated by comparison with other data samples. In this way, data mining can identify trends that go beyond simple data analysis.
O_Record linkages analysis	NT	N_4.1.25 Record linkages analysis	Record linkages analysis: The term ‘record linkage’ refers to techniques used to link records from different sources, by finding entries that refer to the same entity (e.g. person) in two or more files. These entries can be combined to form individual micro records.	Record Linkages Analysis refers to the Activity Type of linking records from different sources, by finding entries that refer to the same entity (e.g. person) in two or more files. These entries can be combined to form individual micro records.

O_Searching and querying			Searching and querying: In this context, 'Searching and Querying' refers to the extraction of information from data by means of query languages. This process is very different from queries performed using a web search engine, which are often unstructured and ambiguous.	
O_Topic detection and tracking	NT	N_5.8 Tracking	Topic detection and tracking: Topic Detection and Tracking (TDT) refers to systems that monitor topically related material and sources, for example news stories, by algorithmic means and track these as they change over time. This data can be in a variety of different types of media formats, such as video, audio and text.	Tracking refers to the Activity Type of following systematically and methodically something in order to note its course.
O_Statistical analysis	NT	N_4.1.31 Statisticalanalysis	Statistical analysis: Statistical analysis methods include descriptive statistics, inferential/predictive statistics and kinging.	Statistical Analysis refers to the Activity Type of studying the collection, analysis, interpretation, presentation and organization of data.
O_Text analysis	NT	N_4.1 Analyzing		Analyzing refers to the Activity Type of extracting any kind of information from data, of discovering recurring phenomena, structures, groupings, and the like.

O_Collating	NT	N_4.2.3 Collating	Collating: Collation is the process of comparing different versions of a text to discover the location and type of textual variants. Collation is fundamental to a variety of scholarly pursuits, for example in the Arts and Humanities field it can be used for the accurate reconstruction of texts of classical works. In the past collation was performed by hand; today, it is performed with the assistance of a computer.	Collating is the Activity Type of comparing different versions of a text to discover the location and type of textual variants. Collation is fundamental to a variety of scholarly pursuits, for example in the Arts and Humanities field it can be used for the accurate reconstruction of texts of classical works. In the past collation was performed by hand; today, it is performed with the assistance of a computer.
O_Collocating	NT	N_4.2.3 Collocating	Collocating: Refers to the techniques used to detect patterns of words that appear together in a text more often than would be expected by chance. A collocation is a group or pair of words that are always used together, and can illustrate restrictions on which verbs or adjectives can be used with particular nouns, or the order in which words appear.	Collocating refers to the Activity Type of detecting patterns of words that appear together in a text more often than would be expected by chance. A collocation is a group or pair of words that are always used together, and can illustrate restrictions on which verbs or adjectives can be used with particular nouns, or the order in which words appear.
O_Content analysis	NT	N_4.1.8 Content Analysis	Content analysis: Content analysis is a research technique focused on the content and internal features of media. It is used to determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner.	Content analysis refers to the Activity Type of analyzing aspects of objects relating to their meaning, such as identifying concepts or meaningful units, by focusing on the content and internal features of media. It is used to determine the presence of certain words, concepts, themes, phrases, characters, or sentences within texts or sets of texts and to quantify this presence in an objective manner.

O_Indexing	NT	N_4.3.12 Indexing	Indexing: Indexing refers to techniques used to generate indexes of words in a text, in order that the reader can find information quickly and easily. Although indexing is still usually performed by hand, specialized computer software is often used to facilitate sorting, editing, formatting and printing.	Indexing refers to the Activity Type of generating indexes of words in a text, in order that the reader can find information quickly and easily. Although indexing is still usually performed by hand, specialized computer software is often used to facilitate sorting, editing, formatting and printing.
O_Parsing	NT	N_4.1.22 Parsing	Parsing: Parsing is an important method used in both computer science and linguistics. The term is synonymous with 'syntactic analysis', and refers to the process of taking a sequence (e.g. of characters), determining its structure, and checking whether it is legal in a given language. This is done by checking the structure of the sequence against a given formal grammar.	Parsing refers to the Activity Type used in both computer science and linguistics. The term is synonymous with 'syntactic analysis', and refers to the process of taking a sequence (e.g. of characters), determining its structure, and checking whether it is legal in a given language. This is done by checking the structure of the sequence against a given formal grammar.
O_Stemmatics	NT	N_4.1.32 StemmaticAnalysis	Stemmatics: Refers to techniques used to reconstruct the transmission of a text on the basis of relations between the various surviving manuscripts.	Stemmatic Analysis refers to the Activity Type used to reconstruct the transmission of a text on the basis of relations between the various surviving manuscripts.

O_Text mining	NT	N_5.3 Data Mining	Text mining: Text mining, sometimes alternately referred to as text data mining, roughly equivalent to text analytics, refers generally to the process of deriving high-quality information from text. 'High quality' in text mining usually refers to some combination of relevance, novelty, and interest.	Data Mining refers to the Activity Type of using computing power to extract hidden patterns from data, analyzing the results from different perspectives and summarizing it into a useful format, such as a graph or table. This process is often facilitated by the use of metadata. It is important that any patterns found are verified and validated by comparison with other data samples. In this way, data mining can identify trends that go beyond simple data analysis.
O_Other analysis	NT	N_4.1 Analyzing		Analyzing refers to the Activity Type of extracting any kind of information from data, of discovering recurring phenomena, structures, groupings, and the like.
O_Design analysis	NT	N_4.1.11 Design analysis	Design analysis: Design analysis is a powerful software technology for simulating physical behavior on the computer. Instead of building a prototype and developing elaborate testing regimens to analyze the physical behavior of a product, engineers can elicit this information quickly and accurately using this technology.	Design analysis refers to the activity Type for simulating physical behavior on the computer. Instead of building a prototype and developing elaborate testing regimens to analyze the physical behavior of a product, engineers can elicit this information quickly and accurately using this technology.

O_Motion analysis	NT	N_4.2.21 Motion analysis	Motion analysis: Motion analysis provides systematic, time-dependent and quantitative data on any movement captured using digital video, as recorded in moving image collections. It is related to motion capture, which is the process of recording movement and translating that movement onto a digital model.	Motion analysis refers to the Activity Type of providing systematic, time-dependent and quantitative data on any movement captured using digital video, as recorded in moving image collections. It is related to motion capture, which is the process of recording movement and translating that movement onto a digital model.
O_Overlaying	NT	N_4.2.14 Overlaying	Overlaying: Refers to the techniques used to produce a geometric intersection between two sets of data to highlight features of interest. Overlaying is often used when studying or displaying maps. Specifically, the term 'overlaying' refers to the use of vector data. A similar method called 'data extraction' is performed using raster data.	Overlaying refers to the Activity Type of producing a geometric intersection between two sets of data in order to highlight features of interest. Overlaying is often used when studying or displaying maps. Specifically, the term 'overlaying' refers to the use of vector data. A similar method called 'data extraction' is performed using raster data.
O_Spatial data analysis	NT	N_4.1.30 Spatial Analysis	Spatial data analysis: This method comprises techniques used to analyze spatial (geographic) data. Such techniques include Thiessen polygon analysis, the X-tent principle, cost/friction analysis and network analysis, among others.	Spatial Analysis refers to the Activity Type of discovering trends or patterns in data pertaining to spatial or geographical aspects of the data. Spatial analysis is often based on techniques of annotation of data, such as Georeferencing or Named Entity Recognition, and may lead to visualization or modeling in the form of maps.

O_Visualisation	NT	N_4.2.19 Visualizing	Visualization: Refers to techniques used to summarize and present data visually, in a form that enables people to understand and analyze the information. Formats can include images, maps, timelines, graphs and tables. Visualization often uses computer graphics software, including virtual reality and 2-D or 3-D animation, as well as static images.	Visualizing refers to the Activity Type of summarizing and presenting in a graphical form. These graphical forms can be used analytically, in order to detect patterns, structures, or points of interest in the underlying data. Virtually any kind of data can be visualized, and the forms of visualizations can be images, maps, timelines, graphs, or tables, and the like. Visualization often uses computer graphics software, including virtual reality and 2-D or 3-D animation, as well as static images.
O_Data Capture	NT	N_4.2.2 Capturing	Converting analogue information into raw digital data ("digitization"). Examples include the recognition of printed text, geophysical surveying or digital photography.	Capturing refers to the Activity Type of transforming existing objects into digital representations, in order to allow them to be manipulated using computer technologies.
O_Image capture	NT	N_4.2.2 Capturing		Capturing refers to the Activity Type of transforming existing objects into digital representations, in order to allow them to be manipulated using computer technologies.

O_2d scanning	NT	N_4.2.2.4 Scanning	2d scanning: The exact method of 2D scanning or photography to use depends largely on the subject of the image. Sometimes the two methods can be used interchangeably to achieve similar results. The main difference is that 2D scanning involves capturing the image gradually as a line of light moves over its surface, whereas in photography the entire image is captured at once.	Scanning refers to the Activity Type of capturing texts, images, artifacts or spatial formations using optical means. Scanning can be made in 2D or 3D, using various means (light, laser, infrared, ultrasound). Scanning usually does not lead to the identification of discrete semantic or structural units in the data, such as words or musical notes, which is something Data Recognition accomplishes. Scanning also includes photographic reproduction.
O_3d scanning	NT	N_4.2.2.4 Scanning	3d scanning: 3D scanning refers to data captured by means of a three-dimensional scanner. A 3D scanner is a device that analyses a real-world object or environment to collect data on its shape and possibly its appearance (e.g. color, texture). The collected data can then be used to construct digital, three-dimensional models useful for a wide variety of applications.	Scanning refers to the Activity Type of capturing texts, images, artifacts or spatial formations using optical means. Scanning can be made in 2D or 3D, using various means (light, laser, infrared, ultrasound). Scanning usually does not lead to the identification of discrete semantic or structural units in the data, such as words or musical notes, which is something Data Recognition accomplishes. Scanning also includes photographic reproduction.
O_Remote sensing	NT	N_4.2.2.5 Sensing	Remote sensing: Acquiring information about an object or phenomenon, by using equipment that is either wireless, or not in physical contact with the object or phenomenon itself. This data is then processed and analyzed using computer software, known as a remote sensing application.	Sensing refers to the Activity Type of acquiring information about an object or phenomenon, by using equipment that is either wireless, or not in physical contact with the object or phenomenon itself.

O_Physical measurement	NT	N_4.1.20 Measuring		Measuring refers to the Activity Type of ascertain the size, amount, or degree of (something) by using an instrument or device marked in standard units.
O_Geophysical survey	NT	N_4.2.2.6 Surveying	Geophysical survey: Refers to data capture by means of geophysical methods for spatial studies. In archaeology, this most often refers to ground-based physical sensing techniques used for imaging or mapping, although data may be collected from above or below the Earth's surface or from aerial or marine platforms.	Surveying refers to the Activity Type of ground-based physical sensing techniques used for imaging or mapping, although data may be collected from above or below the Earth's surface or from aerial or marine platforms.
O_GPS and total station survey	NT	N_4.2.2.6 Surveying	GPS and total station survey: Refers to the capture of spatial information by means of GPS (Global Positioning Systems) or Total Station equipment, which is often used in archaeological field surveys and map-making.	Surveying refers to the Activity Type of ground-based physical sensing techniques used for imaging or mapping, although data may be collected from above or below the Earth's surface or from aerial or marine platforms.
O_Motion capture	NT	N_4.2.2 Capturing	Refers to the capture of data on an object's or person’s movement and translating this onto a digital model.	Capturing refers to the Activity Type of transforming existing objects into digital representations, in order to allow them to be manipulated using computer technologies.

O_Heads-up digitisation and interactive tracing	NT	N_4.2.7 Digitizing	Heads-up digitization and interactive tracing: Heads-up digitization, or on-screen digitization, is a very commonly used method of digitization. It is similar to manual digitization except that the base map or image is already in a digital raster form. The term 'heads-up digitization' is used because the attention of the user is focused up on the computer screen and not on a digitization tablet.	Digitizing refers to the Activity Type of converting something (an input) into digital form that can be processed by a computer.
O_Moving image capture	NT	N_4.2.2 Capturing	Moving image capture: Moving image capture refers to data captured by means of digital video cameras, webcams and TV cards. The essential parameters of any moving image sequence as a visual presentation are: presence or absence of color, aspect ratio, resolution and image change rate.	Capturing refers to the Activity Type of transforming existing objects into digital representations, in order to allow them to be manipulated using computer technologies.
O_Sound and music capture	NT	N_4.2.2 Capturing		Capturing refers to the Activity Type of transforming existing objects into a digital representations, in order to allow them to be manipulated using computer technologies.
O_Music recognition	NT	N_4.1.10 Data Recognition	Music recognition: Music recognition is a type of MIR (Music Information Retrieval), the interdisciplinary science of retrieving information from music.	Data Recognition refers to the Activity Type of treating the immediate products of digital data capture (recording or imaging), such as digital facsimiles of texts or of sheet music, in a way to extract discrete, machine-readable units from them, such as plain text words, musical notes, or still or moving image elements (including, for example, face recognition).

O_Sound generation	NT	N_4.5 Producing	Sound generation: The term ‘sound generation’ refers to the production of sound by means of digital instruments.	Producing refers to the Activity Type of generating or manufacturing something from components or raw materials.
O_Sound recording	NT	N_4.2.2.3 Recording	Sound recording: Sound recording is an electrical or mechanical inscription and re-creation of sound waves, such as spoken voice, singing, instrumental music, or sound effects. The two main classes of sound recording technology are 'analogue recording' and 'digital recording'.	Recording refers to the Activity Type of capturing data or translating information to a recording format stored on some storage medium, which is often referred to as a record or, especially if an auditory or visual medium, a recording. This can be achieved in analogue or digital ways resulting in analogue recordings or digital files stored in different formats (such as WAV, MP3, MPEG4, AVI, etc.).
O_Speech recognition	NT	N_4.1.10 DataRecognition	Speech recognition: Refers to the conversion of spoken words and phrases into text. Speech recognition software (also known as automatic speech recognition or computer speech recognition) converts spoken words to machine-readable input.	Data Recognition refers to the Activity Type of treating the immediate products of digital data capture (recording or imaging), such as digital facsimiles of texts or of sheet music, in a way to extract discrete, machine-readable units from them, such as plain text words, musical notes, or still or moving image elements (including, for example, face recognition).
O_Data Reuse				

O_Use of existing digital data			Use of existing digital data: Refers to the usage of data that already exists in digital form. This can include any type of digital media, such as text, images, sound or video. Digital data may be reused to gain new meaning, and present it to a different audience. There are many different ways this data can be used, such as analysis, editing and publishing.	
O_Textual input				
O_Manual input and transcription	NT	N_4.2 Modifying	Manual input and transcription: Transcription is the conversion of spoken into written words, or of handwriting or a photograph of text into pure text. Additionally, the term can apply to the conversion of a written source into another medium, such as scanning it to produce a digital version.	Modifying refers to the Activity Type of making partial or minor changes to something in order to alter specific characteristics of it. In Thus in Modifying activities the output is different than the input.
O_Text recognition	NT	N_4.1.10 Data Recognition	Text recognition: Text recognition is also known as OCR (Optical Character Recognition). This term refers to the conversion of scanned images of handwritten, typewritten or printed text (usually captured by a scanner) into machine-editable text documents. OCR can also be used to produce text files from files containing images of alphanumeric characters, such as those produced by fax transmissions.	Data Recognition refers to the Activity Type of treating the immediate products of digital data capture (recording or imaging), such as digital facsimiles of texts or of sheet music, in a way to extract discrete, machine-readable units from them, such as plain text words, musical notes, or still or moving image elements (including, for example, face recognition).

O_Data Publishing and Dissemination	BT	N_2.2 Disseminating	Presentation and dissemination / communication of results and findings, using techniques such as desktop publishing or website design.	Disseminating refers to the Activity Type of making objects of inquiry, results of research, or software and services available to fellow researchers or the wider public in a variety of more or less formal ways. It builds on or requires storing and can include releasing and sharing of data using a variety of methods and techniques including the application of linked open data.
O_Data and resource sharing	NT	N_2.1.9 Resource Sharing		Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.
O_Resource sharing	NT	N_2.1.9 Resource Sharing	Resource sharing: Provision of audio, textual, video and graphical data on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.	Resource sharing refers to the Activity Type of audio, textual, video and graphical data provision and exchange on a peer-to-peer network, wiki, Virtual Research Environment, or similar means for collaboration or publication.
O_Streaming media	NT	N_2.2.4 Streaming	Streaming media: Streaming media are multimedia that are constantly received by, and normally presented to, an end-user while being delivered by a streaming provider. The name refers to the delivery method of the medium rather than to the medium itself.	Streaming refers to the Activity Type of transmitting data in a continuous way so that they are constantly received by and presented to an end-user while being delivered by a provider.

O_User-contributed content	NT	N_2.1.5 Crowdsourcing	User-contributed content: User contributed content, a concept also known as 'consumer-generated media' (CGM), 'user-created content' (UCC) or 'user-generated content' (UGC), refers to various kinds of media content that are contributed to a project by the end-users.	Crowdsourcing refers to the Activity Type of generating content by the end-users in a web 2.0 context.
O_Publishing	NT	N_2.2.3 Publishing		Publishing refers to the Activity Type of making any kind of object formally available to the wider public. This can involve objects of research, research data, research results, or tools and services. Publishing can be closed or open access / open source, and research results can be published in print or digital formats.
O_Collaborative publishing	NT	N_2.1 Collaborating	Collaborative publishing: The collaborative creation of content (graphical, textual, audio, video etc.) which evolves over time in a publicly-accessible workspace. Examples can include Wikis and collaborative blogs.	Collaborating refers to the Activity Type of working jointly on an activity or a project. This can be achieved by several researchers, possibly in different places and at different times. Research-oriented collaboration is enabled, particularly, through comprehensive Digital Research Environments, but can also happen around more specific activities, such as communication or sharing of resources.

O_Desktop publishing and pre-press	NT	N_2.2.3 Publishing	Desktop publishing and pre-press: Desktop publishing uses page layout software to create publication documents on a computer. These documents can include displays, leaflets and slide shows as well as books; the term can also apply to websites. Generally, specialist software is required, although more basic results can be achieved with most word processing packages.	Publishing refers to the Activity Type of making any kind of object formally available to the wider public. This can involve objects of research, research data, research results, or tools and services. Publishing can be closed or open access / open source, and research results can be published in print or digital formats.
O_Disk publishing	NT	N_2.2.3 Publishing	Disk publishing: Amalgamating software, media or documents onto a disk (CD, DVD, Blu-Ray etc.) with installation files or viewer software. A CD can usually hold up to 700MB, a DVD can hold between 4GB and 17GB, and a Blu-Ray Disk (BD) can hold between 25GB and 50GB of data.	Publishing refers to the Activity Type of making any kind of object formally available to the wider public. This can involve objects of research, research data, research results, or tools and services. Publishing can be closed or open access / open source, and research results can be published in print or digital formats.
O_Interface design	NT	N_4.5.3 Designing	Interface design: A user interface is the part of a computer program that the user is able to interact with to perform various tasks and conduct activities. In particular, the term 'interface design' refers to the design of websites and software applications.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.

O_General website development	NT	N_4.5.6.1.1 WebDeveloping	General website development: The term 'website development' can incorporate interface and application (e.g. Flash) design and coding and programming for the Web, for example the use of markup languages (e.g. XHTML and XML), stylesheets (e.g. CSS and XSLT), server-side scripting (e.g. ASP and PHP) or client-side scripting (e.g. JavaScript). It can also include the maintenance of websites, and adapting them where necessary, as technology evolves.	Web-Developing refers to the Activity Type of creation of websites, by building on a platform (e.g. content management systems such as Drupal, WordPress and Omeka) or writing HTML, JavaScript, etc. Writing a module/plugin for a platform, or programming web-based applications, should use the "Programming" Activity Type.
O_Server-side scripting	NT	N_4.5.6 Programming	Server-side scripting: Server-side scripting is a technology in which a user's request is fulfilled by running a script directly on the web server to generate dynamic web pages. It is usually used to provide interactive web sites that interface to databases or other data stores.	Programming refers to the Activity Type of creating a code executable by a computer, such as scripts or software. The purpose of programming is to find a sequence of instructions that will automate performing a specific task or solve a given problem. The process of programming thus often requires expertise in many different subjects, including knowledge of the application domain, specialized algorithms and formal logic.

O_Web browser scripting	NT	N_4.5.6 Programming	Web browser scripting: Websites use scripting to enhance the browsing experience. JavaScript and VBScript are the most popular scripting languages on the Web.	Programming refers to the Activity Type of creating a code executable by a computer, such as scripts or software. The purpose of programming is to find a sequence of instructions that will automate performing a specific task or solve a given problem. The process of programming thus often requires expertise in many different subjects, including knowledge of the application domain, specialized algorithms and formal logic.
O_Data Structuring and enchancement	NT	N_4 Processing	Organising data captured from one or various sources into a uniform structure (such as a database), or augmenting digital information (e.g. enhancing a digital image).	Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_Audio-visual processing	NT	N_4 Processing		Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_Sound compression	NT	N_4.2.4 Compressing	Sound compression: In this context, ‘sound compression’, or ‘audio compression’, refers to techniques used to eliminate redundant information of a sound file in order to reduce its size, enabling more efficient storage and transmission.	Compressing refers to the Activity Type of eliminating redundant information of a source file in order to reduce its size, enabling more efficient storage and transmission. Like other forms of compression, video compression can be either lossless or lossy. However, as lossy compression produces considerably smaller files that maintain an acceptable quality.

O_Sound editing	NT	N_4.2.8 Editing	Sound editing: Refers to the techniques used to mix, adjust, optimize and fix sound signals, either for audio or video files. Such editing can include speeding up or slowing down the sound, cutting portions, fading between clips, combining multiple audio files, applying effects such as reverberation and removing unwanted background noise. Types of sound can include dialogue, effects and music.	Editing refers to the Activity Type of improving the quality of an object that has been “captured” by some means.
O_Sound encoding	NT	N_4.2.9 Encoding	Sound encoding: Refers to the transformation of sound signals into a defined data structure. Sound can be encoded into different formats for a variety of purposes. These include the use of MIDI, stereo or surround sound for playback, or compressing the file to enable ease of sharing or transmission, e.g. via the Internet.	Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).

O_Sound encoding - MIDI	NT	N_4.2.9 Encoding	Sound encoding - MIDI: Refers to the transformation of sound signals into a MIDI-conforming data structure. 'MIDI' stands for Musical Instrument Digital Interface, and allows synchronization and data sharing between different electronic musical instruments.	Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).
O_Video and moving image compression	NT	N_4.2.4 Compressing	Video and moving image compression: Refers to techniques used to eliminate redundant information of moving image files in order to reduce its size, thereby facilitating its transmission. Like other forms of compression, video compression can be either lossless or lossy. However, as lossy compression produces considerably smaller files that maintain an acceptable quality, lossless compression is rarely used for video.	Compressing refers to the Activity Type of eliminating redundant information of a source file in order to reduce its size, enabling more efficient storage and transmission. Like other forms of compression, video compression can be either lossless or lossy. However, as lossy compression produces considerably smaller files that maintain an acceptable quality.

O_Video editing	NT	N_4.2.8 Editing	Video editing: To choose this method, use the Data Structuring and Enhancement page. Refers to the techniques used to manipulate moving image data into a defined structure. Linear editing is where the video is edited in scene order, and was performed when footage only existed in a videotape format. In non-linear editing, which is usually used for digital video files, any frame can be accessed easily, and edited in any order.	Editing refers to the Activity Type of improving the quality of an object that has been “captured” by some means.
O_Animation and modelling	NT	N_4 Processing		Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_2d modelling raster	NT	N_4.2.2.1 Modelling	2d modelling raster: Refers to the design of 2-dimensional representations/reconstructions of objects or structures using a raster data model and specialized software. They can be used alone or as components of 3D models.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.

O_2d modelling - vector	NT	N_4.2.2.1 Modelling	2d modelling - vector: Refers to the design of 2-dimensional representations/reconstructions of objects or structures using a vector data model and specialized software. They can be used alone or as components of 3D models.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_3d modelling - interactive	NT	N_4.2.2.1 Modelling	3d modelling - interactive: The term '3D modelling - interactive', or 'Virtual Reality' (VR), refers to the design of interactive 3-dimensional graphical representations of objects or places. These can be reconstructions of existing or historical places, abstract systems, or representations of imagined worlds or objects. Related terms include 'Artificial Reality' and 'Cyberspace', as well as 'Virtual Worlds' and 'Virtual Environments'.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.

O_3d modelling - vector	NT	N_4.2.2.1 Modelling	3d modelling - vector: Refers to the design of 3-dimensional representations/reconstructions of objects or structures using a vector data model and specialized software.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_Animation	NT	N_4.2.1 Animating	Animation: Traditional cel animation consists of photographs of drawings (frames), each of which differs slightly from the next, arranged in sequence on film. In order to create the illusion of movement without jerkiness, between 12 and 70 frames per second must be created.	Animating refers to the Activity Type of creating motion and shape change illusion by means of the rapid display of a sequence of static images that minimally differ from each other.
O_Graphical rendering	NT	N_4.5.8 Rendering	Graphical rendering: The term 'rendering', in a computer graphics context, refers to the process of generating an image from a digital model, by computing its surface qualities, such as color, shading, smoothness and texture. Rendering can achieve both photorealistic and non-photorealistic results, and is the final step in the animation process.	Rendering, in a computer graphics context, refers to Activity Type of generating an image from a digital model, by computing its surface qualities, such as color, shading, smoothness and texture. Rendering can achieve both photorealistic and non-photorealistic results, and is the final step in the animation process.

O_Virtual world modelling	NT	N_4.2.2.1 Modelling	Virtual world modelling: The design and creation of a three dimensional environment, often undertaken with proprietary tools distributed with video games. Usually the term 'virtual worlds' refers to multi-user online environments. Some virtual worlds are designed to simulate a real place, others can be more abstract or fantasy-related.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_Image processing	NT	N_4 Processing		Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_Geo-referencing and projection	NT	N_4.3.1.1 Georeferencing	Geo-referencing and projection: Geo-referencing is a technique used to convert images from image coordinates to real-world coordinates to establish spatial locations of geographical features in terms of map projections or coordinate systems. It can also be used to establish the relation between raster or vector images and coordinates.	Georeferencing refers to the Activity Type of associating something with locations in physical space. The term is commonly used in the geographic information systems field to describe the process of associating a physical map or raster image of a map with spatial locations. Georeferencing may be applied to any kind of object or structure that can be related to a geographical location, such as points of interest, roads, places, bridges, or buildings.

O_Image enhancement	NT	N_4.2.10 Enhancing	Image enhancement: The term 'image enhancement', or 'image editing', refers to techniques used to improve the appearance of digital, as well as analogue, images. Both raster and vector files can be manipulated using specialist software.	Enhancement refers to the Activity Type of improving the appearance of digital, as well as analogue, objects such as images, audio signals, video files etc.
O_Image restoration	NT	N_4.2.15 Restoration	Image restoration: The term 'image restoration' refers to techniques used to digitally rectify known, measured or accurately surmised degradations of images, for example historic photographs, sketches and paintings.	Restoration refers to the Activity Type of repairing, rectifying or renovating something in order to bring it back to its original or former condition.
O_Photogrammetry	NT	N_4.1.23 Photogrammetry	Photogrammetry: Photogrammetry is a technique used to obtain reliable measurements or information from digital or analogue photographs (photo-grammes). It is often classified as a type of remote sensing, as objects are measured without being touched.	Photogrammetry refers to the Activity Type used to obtain reliable measurements or information from digital or analogue photographs (photo-grammes). It is often classified as a type of remote sensing, as objects are measured without being touched.
O_Text encoding	NT	N_4.2.9 Encoding		Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).

O_Lemmatisation	NT	N_4.3.18.2 Lemmatizing	Lemmatization: Refers to techniques used to group a set of forms of a word (a lexeme) together under a single headword, or lemma – the form of the word that would be listed in a dictionary, glossary or index. This enables different inflected forms of the same word to be analyzed as a single item, which is useful when compiling frequency and distribution information.	Lemmatization refers to the Activity Type used to group a set of forms of a word (a lexeme) together under a single headword, or lemma – the form of the word that would be listed in a dictionary, glossary or index. This enables different inflected forms of the same word to be analyzed as a single item, which is useful when compiling frequency and distribution information.
O_Text encoding - descriptive	NT	N_4.2.9 Encoding	Text encoding - descriptive: Descriptive text encoding, or markup, refers to the addition of character and symbols, or tags, at certain places in a text in order to convey information about concrete and abstract concepts (e.g. genres, topical subjects); its logical structure (e.g. identification of headings, paragraphs); its linguistic components (e.g. PoS-tagging [parts of speech], phonological and morphological markup); or about concrete and abstract named entities (e.g. identification of personal names, geographic names).	Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).

O_Text encoding - presentational	NT	N_4.2.9Encoding	Text encoding - presentational: Refers to the addition of character and symbols, or tags, at certain places in a text in order to convey information about its visual appearance. Presentational text encoding, or markup, is used in WYSIWYG (What You See Is What You Get) word processing software, to display onscreen text with the desired formatting.	Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).
O_Text encoding - referential	NT	N_4.2.9 Encoding	Text encoding - referential: Refers to the addition of character and symbols, or tags, at certain places in a text in order to convey information about external elements. These can include hypermedia, or hyperlinks that take the user further down the page, to other pages of the text (internal links), or to related documents (external links).	Encoding refers to the Activity Type of making structural, layout-related, semantic, or other information about a specific part of a document explicit by adding (inline or stand-off) markup to its transcription. This is typically part of the larger activity of scholarly editing of textual, musical, or other sources. It is based on a transcription of the document (the result of data recognition) and guided by a model of the document (the result of modeling).
O_Classifying and linking	NT	N_4.3 Organizing		Organizing refers to the Activity Type of arranging objects (research materials, data sets, images, etc.) in a way such as to facilitate other research activities.

O_Cataloguing and indexing	BT	N_4.3.5 Cataloguing	Cataloguing and indexing: Cataloguing and indexing refer to systems that record and order the semantics and syntax of the data, to enable resource discovery and collection management, to improve searchability and access and to allow the data to be collected and shared.	Cataloguing refers to the Activity Type of recording and organizing the semantics and syntax of the data, in order to enable resource discovery and collection management, to improve searchability and access and to allow the data to be collected and shared.
O_Other data processing	NT	N_4 Processing		Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_Coding and standardisation	NT	N_4.3.19 Standardizing	Coding and standardization: In this context, the term 'Coding and Standardization' refers to the process of translating large amounts of data from diverse sources into standardized codes for data processing.	Standardizing refers to the Activity Type of translating large amounts of data from diverse sources into standardized codes for data processing.
O_Data modelling	NT	N_4.2.2.1 Modelling	Data modelling: Refers to the development of a theoretical framework - based on abstract models that describe how data is represented and accessed - by which information is structured for the use in a database system.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_Practice-Led Research			Practice-led research techniques used for creating digital content such as illustrations, photographs, musical compositions or animations.	

O_Design and modelling	NT	N_4 Processing		Processing refers to the Activity Type of performing a series of actions in something (an input) in order to achieve a particular result (output).
O_2d graphic design	NT	N_4.5.3 Designing	2d graphic design: The technique of using digital drawing software to render two-dimensional visual representations of objects, ideas and messages.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.
O_3d graphic design	NT	N_4.5.3 Designing	3d graphic design: The technique of using digital drawing software to render visual representations of three-dimensional objects. The principles are very similar to those of two-dimensional graphic design, but different results are produced.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.

O_Interface design	NT	N_4.5.3 Designing	Interface design: A user interface is the part of a computer program that the user is able to interact with to perform various tasks and conduct activities. In particular, the term 'interface design' refers to the design of websites and software applications.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.
O_2d illustration	NT	N_4.2.19.1 Illustrating	2d illustration: A two-dimensional visualization that stresses subject more than form. Illustrations can include drawings, paintings, photographs or digital images that decorate textual information and act as a visual representation of its content. In particular, illustrations can often provide the reader with a greater understanding of the subject matter than merely a textual description.	Illustrating refers to the Activity Type of using visualization, in order to stress subject more than form. Illustrations can include drawings, paintings, photographs or digital images that decorate textual information and act as a visual representation of its content. In particular, illustrations can often provide the reader with a greater understanding of the subject matter than merely a textual description.

O_3d modelling - vector	NT	N_4.2.2.1 Modelling	3d modelling - vector: To choose this method, use the Data Structuring and Enhancement page. Refers to the design of 3-dimensional representations/reconstructions of objects or structures using a vector data model and specialized software.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_Texture design and mapping	NT	N_4.5.3 Designing	Texture design and mapping: The production and applying / wrapping of a texture image onto an object to create a realistic representation of the object in 3D space. The process is similar to wrapping a plain object in patterned paper. Texture mapping adds detail, surface texture or color to the object.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.

O_Virtual world modelling	NT	N_4.2.2.1 Modelling	Virtual world modelling: To choose this method, use the Data Structuring and Enhancement page. The design and creation of a three dimensional environment, often undertaken with proprietary tools distributed with video games. Usually the term 'virtual worlds' refers to multi-user online environments. Some virtual worlds are designed to simulate a real place, others can be more abstract or fantasy-related.	Modeling refers to the Activity Type of describing the elements and the structure of an object of enquiry in a machine-readable, explicit way, in order to construct an actionable representation of some object of research; the result of such modeling can be a schema. Modeling can also refer to the activity of transforming or manipulating a digital object in such a way as to make it compatible with a previously constructed model or schema.
O_Video and moving images				
O_Moving image capture	NT	N_4.2.2 Capturing	Moving image capture: To choose this method, use the Data Capture page. Moving image capture refers to data captured by means of digital video cameras, webcams and TV cards. The essential parameters of any moving image sequence as a visual presentation are: presence or absence of color, aspect ratio, resolution and image change rate.	Capturing refers to the Activity Type of transforming existing objects into digital representations, in order to allow them to be manipulated using computer technologies.

O_Storyboarding	NT	N_4.2.19 Visualizing	Storyboarding: A graphic, sequential depiction of a narrative, which is often similar in appearance to a comic strip. Storyboards are often used to plan and visualize live-action video, animation, theatre, advertising, graphic novels or interactive media (including website interfaces).	Visualizing refers to the Activity Type of summarizing and presenting in a graphical form. These graphical forms can be used analytically, in order to detect patterns, structures, or points of interest in the underlying data. Virtually any kind of data can be visualized, and the forms of visualizations can be images, maps, timelines, graphs, or tables, and the like. Visualization often uses computer graphics software, including virtual reality and 2-D or 3-D animation, as well as static images.
O_Video post-production	NT	N_4.5 Producing	Video post-production: The term 'video post-production' refers to the process of producing a list of edit decisions and then creating an edited program ready for distribution or viewing. It can apply to any of the processes that occur after the filming and recording has taken place.	Producing refers to the Activity Type of generating or manufacturing something from components or raw materials.
O_Music and sound				
O_Audio dubbing	NT	N_4.2.10 Enhancing	Audio dubbing: A process to enhance, add to, or replace totally, the originally recorded audio signal without modifying the original video signal.	Enhancing refers to the Activity Type of improving the appearance of digital, as well as analogue, objects such as images, audio signals, video files etc.

O_Audio mixing	NT	N_4.2.13 Mixing	Audio mixing: A process or technique used to combine a number of recorded sounds, such as speech, atmosphere, sound effects and music, into one or more tracks. Usually, the intention is to blend the sounds in such a way as to create the illusion that they were all recorded together.	Mixing refers to the Activity Type of combining, juxtaposing or putting together different objects in order to form one substance or mass.
O_Music composition	NT	N_4.5.2 Composing	Music composition: The process of developing a piece of original music designed for repeated performance. Musical compositions are normally written using musical notation, although some pieces are played entirely from memory, or improvised spontaneously during the performance itself. Some performances are recorded in order that they can be played back numerous times; others exist purely as a single live event.	Composing refers to the Activity Type of forming a work of art (a music, text, visual, or dance / theatrical composition), by ordering or arranging the parts / elements, especially in an artistic way.
O_Sound generation	NT	N_4.5 Producing	Sound generation: To choose this method, use the Data Capture page. The term 'sound generation' refers to the production of sound by means of digital instruments.	Producing refers to the Activity Type of generating or manufacturing something from components or raw materials.
O_Scanning, photography, and images				

O_Image manipulation	NT	N_4.2 Modifying	Image manipulation: The process of modifying an image in a manner that affects its original visual form. Image manipulation differs from image enhancement or restoration in that the subject matter and meaning of the original image are often changed, sometimes quite dramatically, although some manipulations are more subtle, blurring the boundaries between truth and fiction.	Modifying refers to the Activity Type of making partial or minor changes to something in order to alter specific characteristics of it. In Thus in Modifying activities the output is different than the input.
O_Photography	NT	N_4.2.2.2 Photographing	Photography: Photography is the process, activity and art of creating still or moving pictures by recording radiation on a sensitive medium, such as a photographic film (a film camera), or an electronic sensor (a digital camera). The different types of camera are each more suited to different situations and objectives.	Photographing refers to the Activity Type of creating still or moving pictures by recording radiation on a sensitive medium, such as a photographic film (a film camera), or an electronic sensor (a digital camera). The different types of camera are each more suited to different situations and objectives.
O_Photomontage	NT	N_4.2.8 Editing	Photomontage: A technique whereby an image is produced by assembling various different photographs. Originally, this was done by physically cutting and pasting different photographs together, then taking a photograph of the result. Now, it is usually performed using digital image editing software.	Editing refers to the Activity Type of improving the quality of an object that has been “captured” by some means.

O_Physical computing			Physical computing: Physical computing involves designing and building systems that respond to the world around them through sensors and controllers in order to trigger changes in software or hardware systems. It is a creative framework for understanding human beings' relationship to the digital world.	
O_Strategy and Project Management	BT	N_4.3.14.4 ProjectManagement	The planning, organization and monitoring of ICT-based projects, focusing upon issues such as data security, risk analysis and system usability.	Project Management refers to the Activity Type of developing a strategy and assessing risk for conducting a project, as well as task management activities, such as keeping a record of tasks, due dates, and other relevant information. It optionally includes activities such as sending reminders and status reports. Project Management is related to Collaboration.
O_ICT security/ backup				
O_Curation	NT	N_4.4.1 Curating	Curation: Digital curation refers to the process of managing digital information throughout its lifecycle. It is built upon the notion that the time period that digital information has value to a stakeholder is likely to be greater than the time period that it will be accessible and usable, due to its dependency upon specific technological components.	Curating refers to the Activity Type of selecting, organizing and looking after specific objects typically using professional or expert knowledge.

O_Preservation	NT	N_4.4 Preserving	Preservation: The main objective of digital preservation is to ensure that data continues to remain accessible, even if the original operating environment, encoding format or other dependency is rendered obsolete. This goes beyond the simple long term storage of data to include the means by which a resource is interpreted and retrieved to ensure it remains accessible and useful.	Preserving refers to the Activity Type of applying specific strategies, activities and technologies for the purpose of ensuring an accurate rendering of digital content over time. It facilitates the reuse of research data, objects, and related resources and may include activities related to sustainability and interoperability.
O_Security planning	NT	N_4.3.14 Managing	Security planning: System security exists at many levels, on desktop and laptop computers, as well as mobile devices. Network security includes the provision of adequate infrastructure to protect the network and its resources from unauthorized access, such as hackers or malware attacks. The effectiveness of security measures taken should be consistently monitored, and adapted in the case of any intrusion. Various tools are available to test for vulnerabilities or security holes in a system.	Managing refers to the Activity Type of organization, coordination, monitoring and adaptation of systems development tasks and resources.
O_Version control	NT	N_4.4.5 Versioning	Version control: Version control can also be referred to as 'revision control', 'source control', or '(source) code management' (SCM). The term refers to the management and control of features and changes made to software throughout the life cycle of an ICT project.	Versioning refers to the Activity Type of management and control of features and changes made to software throughout the life cycle of an ICT project.
O_Requirements and prototyping				

O_Accessibility analysis	NT	N_4.1.1 AccessibilityAnalysis	Accessibility analysis: Accessibility involves designing a computer system to allow all users equal access to the information contained within it and the benefits it provides. Since the introduction of the final element of the Disability Discrimination Act in late 2004, equal access to publicly-available services for disabled users has been a legal requirement for all organizations operating in the United Kingdom.	Accessibility analysis refers to the Activity Type that involves designing a computer system to allow all users equal access to the information contained within it and the benefits it provides. Since the introduction of the final element of the Disability Discrimination Act in late 2004, equal access to publicly-available services for disabled users has been a legal requirement for all organizations operating in the United Kingdom.
O_Human factors analysis	NT	N_4.1.15 HumanFactorsAnalysis	Human factors analysis: The 'human factors' of a computing system covers two main areas: the first is the social impact that the system will have, while the second concerns the relationship that the system's users will have with it.	Human factors analysis: The 'human factors' of a computing system covers two main areas: the first is the social impact that the system will have, while the second concerns the relationship that the system's users will have with it.
O_Usibility analysis	NT	N_4.1.37 Usability analysis	Usability analysis: The "usability" of a computer system is literally its "ease of use": how well it conveys information about its purpose and the methods available for users to achieve their goals. The term can also encompass the standards and guidelines of design for accessibility.	Usability analysis refers to the Activity Type that determines the "ease of use" of a computer system. It analyses how well it conveys information about its purpose and the methods available for users to achieve their goals. The term can also encompass the standards and guidelines of design for accessibility.
O_Prototyping	NT	N_4.5.7 Prototyping	Prototyping: A prototype is a model of a new system or product. It is often used as part of the design process in order to explore alternatives, test theories and confirm performance prior to starting production of a product.	Prototyping refers to the Activity Type of creating a model of a new system or product. It is often used as part of the design process in order to explore alternatives, test theories and confirm performance prior to starting production of a product.

O_ICT project management	NT	N_4.3.14.4 ProjectManagement		Project Management refers to the Activity Type of developing a strategy and assessing risk for conducting a project, as well as task management activities, such as keeping a record of tasks, due dates, and other relevant information. It optionally includes activities such as sending reminders and status reports. Project Management is related to Collaboration.
O_Documentation	NT	N_4.3.11 Documenting	Documentation: The thorough documentation of an information system's design is vital to its sustainability. Programming code can swiftly become akin to a cryptic crossword, and a professional programmer will always ensure that the clues needed to decipher the code are included within it.	Documenting refers to the Activity Type of providing information regarding each and every step of the activities that took place in a Project, in order to describe how everything was done and enable someone that was not initially involved to understand.
O_Iterative design	NT	N_4.5.3 Designing	Iterative design: Relates to the concept of releasing versions of a design, based on a cycle of prototyping (or initialization), testing, analyzing and refining a product or process. Iterative design is commonly used in the development of human computer interfaces.	Designing refers to the Activity Type of the creating a plan or convention for the construction of an object or a system (as in architectural blueprints, engineering drawings, business processes, circuit diagrams and sewing patterns). Designing has different connotations in different fields. In some cases the direct construction of an object (as in pottery, engineering, management, cowboy coding and graphic design) is also considered as designing.

O_General project management	NT	N_4.3.14.4 ProjectManagement	General project management: The organization, coordination, monitoring and adaptation of systems development tasks and resources, usually in tandem with a documented project plan which may incorporate elements of one or more ICT project management methodologies.	Project Management refers to the Activity Type of developing a strategy and assessing risk for conducting a project, as well as task management activities, such as keeping a record of tasks, due dates, and other relevant information. It optionally includes activities such as sending reminders and status reports. Project Management is related to Collaboration.
O_Risk management	NT	N_4.3.14.5 RiskManagement	Risk management: A two-step process to analyze the risks inherent in the development of an information system, then develop strategies to mitigate them, depending upon their likely impact. The risk management process should minimize spending, but maximize the reduction of the negative effects of the various possible risks to the project.	Risk management refers to the Activity Type of analyzing the risks inherent in the development of an information system, and developing strategies to mitigate them, depending upon their likely impact. Risk Management should minimize spending, but maximize the reduction of the negative effects of the various possible risks to the project.

O_System quality assurance and code testing	NT	N_4.1.13 Evaluating	System quality assurance and code testing: The term Quality Assurance refers to methods used to test and improve the production process and the quality, security, suitability, maintainability and reliability of a product or system, which take place during its design and manufacture, and prior to its release.	Evaluating refers to the Activity Type of determining systematically a subject's merit, worth and significance, using criteria governed by a set of standards. The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change. Evaluation is often used to characterize and appraise subjects of interest in a wide range of human enterprises, including the arts, criminal justice, foundations, non-profit organizations, government, health care, and other human services.
O_Strategic management	NT	N_4.3.14.6 StrategicManagement	Strategic management: Input into networking, coordination, strategic planning, and the legal/ financial elements of digital humanities.	Strategic Management refers to the Activity Type of providing input into networking, coordination, strategic planning, and the legal/ financial elements of digital humanities.