Instructions to suppliers of equipment or software affected by the requirements listed below:

**If you comply with the requirements relevant to your delivery to NRK, you should only quote "Read and understood" at the bottom of this list of section 2. NRK will then regard this as an acceptance of the relevant requirements or at least as a confirmation that the Supplier will comply with the requirements at the time of delivery.**

**In any other case the Supplier will have to make any reservations in writing with regards to the relevant point in this requirement table, as to how you do not comply. If your equipment fits none of two first categories, please also answer questions in section 3.**

# 1. General client computers requirements

1.1 Operating system: Windows 8.1 or Windows 7 Service Pack 1 64- bit. Mac OSX by prior agreement.

1.2 OS installation is done using NRK's standardized installation method and setup. NRK's Windows installation includes the latest versions of .Net, XML, MDAC, Direct X, DCOM, and Windows installer.

1.3 All client computers are members of an Active Directory domain. This is mandatory

1.4 All Windows client computers must run the latest version of Symantec Endpoint Protection software

1.5 All client computers are patched up to date. All systems must accept new patches continuously

1.6 All client programs should be programmed in accordance with Microsoft's requirements for Windows/applications, e.g.:

1.6.1 Users should not need administrative privileges to run any application
1.6.2 Applications should be installed under Program Files
1.6.3 Applications should be programmed to run under any language version of Windows

1.7 Applications must be able to be distributed to client computers using NRK's preferred management software, Absolute Manage. Absolute Manage supports distribution of suitable .EXE, .MSI and PKG files, amongst others. If possible, the installation should run silent

1.8 Local user accounts should not be used. Service accounts, which systems depend upon, should all reside in Active Directory. All user accounts should be able to use strong passwords in accordance to Microsoft's recommendation

1.9 Domain authentication is preferably done using Kerberos. NTLM v2 is an option

1.10 Systems running on client computers must be able to run on a standard model that meets hardware requirements set by the software/hardware manufacturer

1.11 MS Office 2010/2013 and Oracle client version 11 is commonly used software on NRK's Windows computers; software must be compatible with these versions and later versions whenever NRK decides to upgrade company wide. Other standard SW on NRK's Windows computers: Quick Time Player, Windows Media Player, Internet Explorer 10, Silverlight, Adobe Flash Player, Sun Java and Acrobat Reader

1.12 Web applications must support the following web-browsers:

1.12.1 Safari (on Mac OS X)
1.12.2 Firefox (on Linux, Windows and OS X)
1.12.3 Chrome (on Linux, Windows and OS X)
1.12.4 Internet Explorer 10 or newer (on Windows)

1.13 All new systems MUST support UTF-8 encoding

1.14 All new systems must support IPv4 and IPv6

## 2. General server requirements

2.1 Operating system: Windows Server 2012 R2, Windows Server 2008 R2, Ubuntu LTS/CentOS or Mac OSX Server 10.9. Windows Server 2012 R2 64-bit is the current MS standard

2.2 OS installations are preferably done by NRK, using standardized installation method and setup. NRK's Windows server installation includes latest versions of .NET, Windows Installer and Internet Explorer. If installation is done by the supplier, NRK must be able to adjust the installation to NRK's specifications

2.3 All Windows servers are members of an Active Directory domain

2.4 All Windows servers must run Symantec antivirus software (same version as for clients)

2.5 All Windows servers are patched up to date. All systems must accept new security patches for OS and HW continuously

2.6 All Linux servers are patched up to date. All systems must accept new patches continuously

2.7 All programs running on servers should be running as services. (Programs should not be dependent upon having a specific user logged on to the server)

2.8 Local user accounts should not be used. Service accounts, which systems depend upon, should all reside in Active Directory. All user accounts should be able to use strong passwords

2.9 Authentication towards the domain is preferably done using Kerberos. NTLM v2 is an option.

2.10 Databases supported at NRK are Microsoft SQL (preferred), MySQL and Oracle. MySQL is an option on Linux servers only.

2.11 Internet servers supported at NRK are Internet Information Server (IIS) and Apache. Apache is an option on Linux servers and Mac OS X Server only.

2.12 All servers must be able to be monitored with NRK's monitoring system, Microsoft SCOM 2012, either by installation of agent software, agentless monitoring supported by our monitoring systems or SNMP support.

2.13 All new servers must support IPv4 and IPv6

2.14 NRK has standardized on VMware vSphere 5.5, and use virtual servers as default on new installations. Virtual servers is an absolute requirement from all vendors and any reason for not virtualizing should be very well documented and tested. If virtualization is not possible, NRK will preferably purchase all standard server hardware required for new systems on our own agreements. These are the standard NRK models in prioritized order:

2.14.1 Virtual (VMWare ESXi /vSphere 5.5 or newer)
2.14.2 Blade (HP c-class or Dell M-series)
2.14.3 Rack mounted server (HP ProLiant DL3xx or Dell R-series)

Confirmation of compliance with the above requirements
with remarks/comments/reservations (if any):

_____

(Sign) Name / Date / Company

Space for making any remarks relevant to the requirements listed in Section 1 and/or 2:

**If your equipment fits none of two first categories, please also answer questions in this section:**

## 3. Requirements for equipment running other OS than specified above:

3.1 Which OS is the unit running? – Provide a short explanation and links to the documentation

3.2 Is it possible to run the unit on one of the NRK preferred OS and/or HW-platforms? If not possible provide a short explanation. If yes, estimate the porting costs

3.3 Is the OS installed on a read only solid state disk or hard drive with read only permissions?

3.4 Can the OS be updated and how is it distributed and installed?

3.5 Which services are installed and running on the unit (e.g. ftp, samba, http etc.)?

3.6 Which services are required to preserve the functionality?

3.7 Is it possible to deactivate the services that are not in use (not necessary to preserve the desired functionality)?

3.8 Is DHCP supported?

3.9 Is it possible to run the unit behind a firewall? If yes which ports need to be open to preserve the functionality?

3.10 Is it possible to run antivirus software on the unit? If yes, give a short description of how it can be kept updated?

3.11 How is the unit administrated?

3.12 Is it possible to activate services remotely that is currently not in use?

3.13 Is the unit access protected? (Password/certificate etc.)

3.14 Is it possible to change the default passwords of the users including root?

3.15 How many users are defined on the unit? Can more users be defined?

3.16 How is it possible to monitor and keep track of the health of the unit?

- 3.16.1 Queues, jobs in progress
- 3.16.2 Storage, RAM, CPU-load
- 3.16.3 Exception alarms

3.17 Is SNMP supported? If yes give a short description of the functionality and supported versions.