Council on General Affairs and Policy of the Conference – March 2017

Document	Preliminary Document ☒ Procedural Document ☐ Information Document ☐	No 20 of March 2017
Title	Modernisation of the Permanent Bureau's IT Infrastructure and Information Management environment, including the migration to cloud-based systems	
Author	Permanent Bureau	
Agenda item	Item VI.5.d.	
Mandate(s)	n.a.	
Objective	To inform Members of the need to modernise the Permanent Bureau's IT and IM environment; the benefits to be gained from such modernisation; the investment required to unlock those benefits; and to seek voluntary contributions from Members to make the investment.	
Action to be taken	For Approval ☒ For Decision ☐ For Information ☒	
Annexes	1. Study prepared by KBenP 2. Study prepared by Aeon	
Related documents	n.a.	

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A.   INTRODUCTION

1.   The last decade has shown a significant transformation of the information technology (IT) and information management (IM) landscape, in particular in the areas of communication, data access, collaboration, storage and security. The Permanent Bureau's (PB) local IT infrastructure, which was implemented in the late 1990s, offers suboptimal and less-cost-effective services compared to other solutions that are now readily available, such as cloud hosting. The PB has noticed that its IT expenditure needs to be better targeted to services currently available so as to avail itself of the best-suited IT solutions.

2.   Moreover, the PB needs to modernise its IM tools. The PB initially conceptualised its IM approach in 2003 through the Reeks Report. However, whereas the tools have remained the same since 2003, the PB's IM needs have changed substantially, especially in the area of document management, information exchange and collaborative work solutions. Despite certain in-house developments, IM needs are not adequately covered anymore, and many bottlenecks exist.

3.   A prime example is the PB's Client Relations and Content Management System (CRM / CMS). It is currently used to manage the PB contacts, correspondence and important documents, thus forming the backbone of the Organisation's corporate knowledge. Having been custom-built in 1997 for the specific needs of the PB, the system provider withdrew support for the system in 2014. Since then, expensive specialist services have been retained to ensure the integration of the CRS / CMS with the latest Microsoft Office products. Nevertheless dysfunctions occur regularly which negatively impact the work of the PB.

4.   The modernisation of the IT / IM environment, including the replacement of the ailing CRM / CMS, is a central part of a necessary multi-year IT and IM strategy, aimed at developing and implementing efficient and cost-effective solutions that satisfy the PB's immediate and long-term IT and IM needs for the benefit of the Organisation's Members.

5.   The costs for this modernisation can be partially defrayed by spreading out the various phases over two Financial Years; however, the PB requires additional funds to achieve such modernisation and proposes that this funding be provided through Voluntary Contributions made by the Members.

B.   DEVELOPING THE BUSINESS CASE

6.   In the course of 2016, the PB asked an independent IT consultant, BKenP, to carry out a study. The aim of the study was to recommend in the first instance which type of infrastructure would be the most cost-effective for the PB, and then on a more detailed scale, which new tools should be implemented.

7.   The study carried out by BKenP (Annex I) showed that it would not be profitable in the long run to replace the current CRM / CMS with another local proprietary solution, and strongly advised the PB to use integrated solutions. Furthermore, in light of the latest developments of cloud services, the study recommended that the PB migrate its infrastructure to Microsoft Cloud and use the SaaS[1] solution offered by Microsoft Online 365 (MSO 365).

8.   Aeon, the PB's current IT provider, agreed with the conclusions of this study and produced a report with more detailed information regarding the costs and implications of the current IT infrastructure (Annex II).

9.   By upgrading data synchronisation and exchange in a secure manner, the use of MSO 365 would optimise collaborative work at both the internal and external levels. On a technical level, tools such as Workflow and other MSO 365 automated processes would greatly enhance the efficiency and speed of executing daily tasks. On a more global level, collaboration with Regional Offices would be enhanced, and the corporate memory of the Organisation would be centralised and optimised using powerful records management and archiving options.
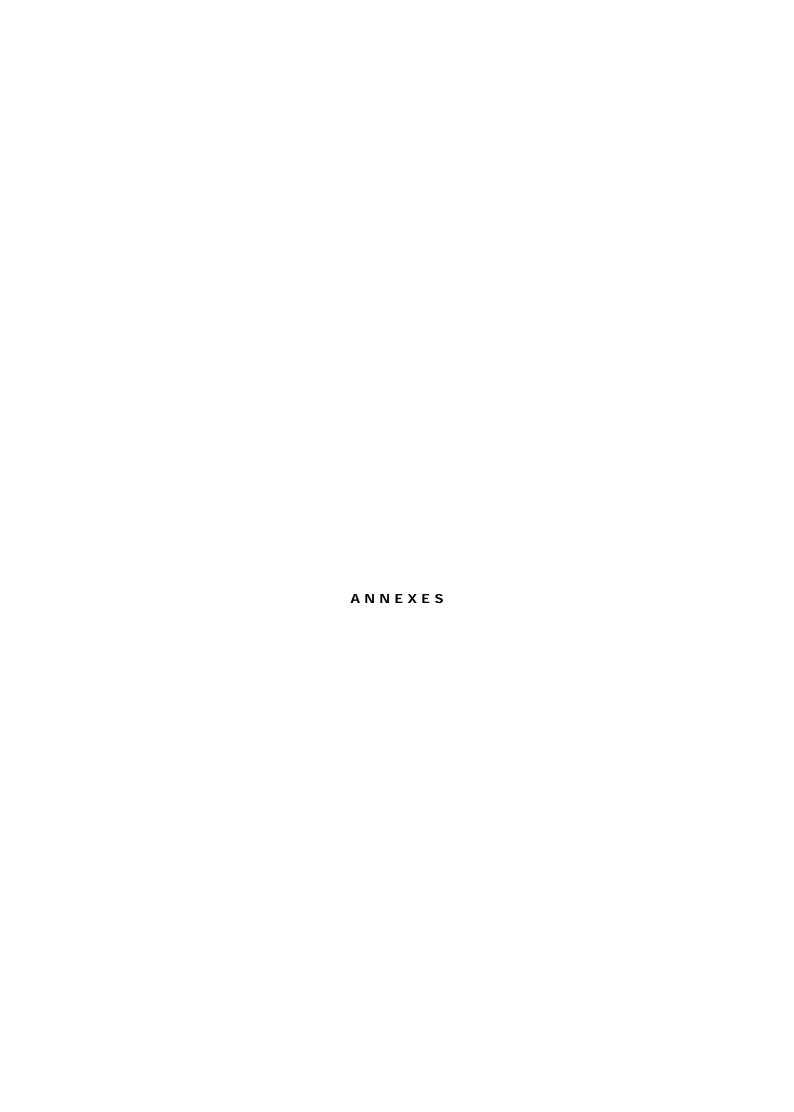
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[1] Software as a service.

10.	In addition, the availability of constant software updates to MSO 365 would ensure that the PB would work using the latest market services, preventing the issues currently caused by the use of obsolete and redundant software.

11.	The implementation of MSO 365 would cover the IM needs of the PB, and improve its productivity as well as its services to Member States.

## C.	INVESTING INTO A NEW IT / IM ENVIRONMENT

12.	The need to invest into a new IT / IM environment is comprised of two elements: the investment in the migration to a new IT / IM environment and the maintenance of this environment. Both Reports consider this need to invest, albeit, due to the terms of reference, at different levels of detail.

13.	With respect to the migration, the total costs are currently estimated to be around € 50,000. This figure, however does not (yet) cover the training costs for the staff, and one-time fees which may be required for the replacement of certain IT equipment. Thus, as the full scope of the migration is still subject to discussions with specialised MSO 365 providers, the PB is not yet in the position to offer final figures. More precise figures should become available in April 2017.

14.	With respect to the maintenance of an MSO 365-based IT / IM environment, it appears that now, the costs would be similar to those that arise for the ongoing maintenance of the current, outdated environment.

## D.	CONCLUSION

15.	Modernisation of the PB's IT and IM environment is necessary. Done properly, it will deliver increased capacity through efficiency gains and enhanced service delivery to Members. It can be expected that a new environment would, as a result, drive down externalities and opportunity costs that are generated by the currently used, yet outdated environment.

16.	While the PB can manage the development and migration strategically, and anticipates absorbing some of the associated costs by allocating them over two Financial Years, additional financial support in form of Voluntary Contributions made by the Members towards the modernisation is essential to execute the development of, and migration to, the new environment, as well as to ensuring a smooth and effective transition.

ANNEXES

IT Study – The Hague Conference on Private International Law (HCCH)

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October 2016 v2

KBenP

informatie op orde

Content

1.   Introduction

In the 1990's the Permanent Bureau (PB) of the HCCH implemented a local IT infrastructure based on a local network. This network and infrastructure have been maintained since then by a service provider.

Since the 1990's the way information is handled by employees within the Permanent Bureau has changed dramatically. Physical mail has been replaced with email and multiple devices are used to access information from within the Permanent Bureau or when on a mission.

In order to access documents from outside, a VPN / Terminal Server was realized in the 2000's. In the recent years a small group of persons experimented with MS365 to share and work together on documents.

Furthermore, the current system (called RBS Perfect View) which is used to register and manage all contacts, email and documentation, needs to be migrated. The developers of the RBS have retired in 2014, and the system needs to be replaced, as it is not maintained anymore and encounters numerous bugs.

The RBS was developed for the specific needs of the Permanent Bureau in 1997, and was at some point also used to register important documents. Because it has been used for the last 19 years, the RBS represents in fact the foundation of HCCH's collective memory.

In conclusion, the HCCH needs to implement a new solution to cover their old and new needs in information management. At the same time, HCCH needs to make a strategic choice for its IT infrastructure by either keeping it local or to move to the cloud.

2.   Research method

During this study multiple documents have been studied to acquire a clear view of the current situation. Part of this desk research focused on the current hard- and software situation, and part focused on the business needs. The information thus obtained, was used to conduct interviews with relevant stakeholders.

The following documents were used during this study:

-       Annual Report 2015
-       Classification scheme and archives retrieving
-       Courier
-       Defining IM needs
-       RBS PV retrieval
-       Registering and archiving procedures
-       Software overview HCCH

Multiple interviews were conducted to get more insight knowledge about the current situation and the needs of the business.

The following employees have been interviewed:

Ms Anna Koelewijn	Ms Livia van der Graaf	Mr Stuart Hawkins
Ms Maryze Berkhout	Mr Frederic Breger	Mr Thomas John
Mr Philippe Lortie	Mr Brody Warren	Mr Willem van der Endt
Ms Laura Martínez-Mora	Ms Lydie de Loof	Mr Christophe Bernasconi
Ms Ning Zhao	Ms Aurélie Mercier	Ms Marta Pertegás
Ms Laura Molenaar	Ms Ana Zanettin	
Ms Sophie Pineau	Ms Marie-Charlotte Darbas	

To be able to compare the different available solutions in the market, we have created an overview of functional requirements. This overview is based on desk research and the results of the interviews. In our market analyses we have explored the financial costs of the available solutions as well.

Based on the market analyses we have come to a conclusion which scenario best fits the needs of HCCH. An estimate is included on planning, risks, impact on the IT organization and other software, human effects and migration.

3.   Comparison

3.1.   Solutions

When looking at the basic needs of HCCH only two sensible options are available. When it comes to an integrated and sustainable solution the options are Microsoft or Google. For an organization with this(small) size of HCCH, these two are the two manageable and affordable solutions. Microsoft offers an integrated solution called Office 365. Most of the requirements will be covered by Microsoft SharePoint, as part of Office 365. Google offers Google Apps for Work. Both solutions cover the same basics requirements on document and email handling.

An unattractive option is to choose for a combination of multiple stand-alone solutions. The downside when choosing for a combination of solutions will be the complexity of maintaining them as well as the costs.

3.2.   Requirements

The table below shows the requirements of HCCH. RBS is lacking some of these requirements at this moment. Both Microsoft and Google offer a solution that marches the needs of HCCH.

	RBS	Microsoft	Google
Document Management			
General			
Classification of documents and emails	v	v	v
Search in metadata	v	v	v
Search full text	x	v	v
User friendly and intuitive solution	x	v	v
Accessibility from everywhere, anytime	x	v	v
Mail management: to store different format: msg with attachments, PDF, word (old versions)	v	v	v
Documents			
Registration of documents	v	v	v
Use of multi-language templates (40)	v	v	v
Automated version control	x	v	v
Share documents with a group or individual	x	v	v
Create confidential document for a a group or individual	x	v	v
Work together in the same document	x	v	v
Add metadata to the document: (ID, sender, date, object, classification, etc.)	v	v	v
Email			
Registration of in and out coming mails (44.500 incoming mail cards, 61.000 out coming mails cards)	v	-1	-2
Link incoming and outgoing mail	v	-3	-4

[1] Add-on required (example: https://www.youtube.com/watch?v=mqKzgHTqlmI)

[2] Add-on required

[3] There is no possibility to link mails from personal mailboxes

[4] There is no possibility to link mails from personal mailboxes

Record Management			
Rights managements: prevent a record to be erased or/and moved	x	v	v
Archiving and storage of records	x	v	v
Client Relation Management			
Companywide shared organizational (5.600) and personal contact cards (18.000).	v	v	v
Expandable metadata on contacts (personal information, multiple job titles, etc)	v	v	v
Merge contacts to Word (letters) and Excel (lists of participants)	v	v	-5
Merge contacts to Outlook (mailing)	v	v	-6
Multilingual card (TBD)	v	v	x
List management (to create and update mailing lists and send mailings)	v	v	v
Search on all fields	v	v	v
Link documents to contacts	v	v	v
Extra			
Time registration	x	-7	-8

3.3. Integration

The main difference on both solutions is the way to integrate with the software already used within HCCH.

Users are familiar with Microsoft products due to working with Word, Excel, Outlook and PowerPoint. SharePoint integrates perfectly with these solutions. To make fully use of the possibilities of Google everybody should also change from Microsoft Word to Google Docs, from Microsoft Excel to Google Spreadsheet, etc. When working with others outside HCCH this could lead to issues when opening a Google Doc in Microsoft Word.

3.4. Financial costs

The license model of Microsoft is rather complicated. To find out the optimal licensing structure an appointment with Microsoft is needed and can easily be arranged. Especially to find out the additional costs in comparison with the current costs for Word, Excel, Outlook and PowerPoint. The costs for Office 365 Business Essentials which includes SharePoint Online is € 80,40 yearly per person. Besides these costs, an add-on for email will be necessary for about € 50, - yearly per person.

The initial cost of using Microsoft SharePoint will be mainly focused on configuring SharePoint correctly and to migrate the current documents and contacts. The estimated costs for configuration will be between € 15.000, - and € 30.000. Migration will cost between € 10.000, - and € 20.000, -.

Google's licensing structure is a lot easier. The license will cost € 96, - yearly per person. No additional add-on is necessary when also using Google Docs, Spreadsheet and Mail.

The initial costs will be between € 10.000, - and € 20.000, - including configuration and migration.

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5 When using Google Docs
6 When using Google Mail
7 Add-on required
8 Add-on required
9 GO Opleidingen is part of the KBenP Group
10 Fairpoint is part of the KBenP Group.
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Yearly costs

	Microsoft SharePoint	Google
Office 365 Business Essentials	€ 80,40 pp	€ 96, - pp
Add-on for email	€ 50, - pp	-
Total	€ 130,40 pp	€ 96, - pp

Initial cost

	Microsoft SharePoint	Google
Configuration	€ 15.000, - and € 30.000,-	€ 10.000, - and € 20.000, -
Migration	€ 10.000, - and € 20.000,-	-

4.   Conclusion

4.1.   New solutions

When looking at the requirements of HCCH and the possible solutions we recommend to make use of Microsoft 365. The HCCH is already using Microsoft software and also changing the current software like Word and Outlook will put too much pressure on the organization. Besides, even though the two solutions both cover the basis needs of the organization, the working of SharePoint on Client Relation Management comes closest to the current functionality of RBS.

The downside of Microsoft 365 is the initial costs. Although a lot of the configuration could be done by HCCH itself, we strongly recommend to invest in professional consultancy. Making mistakes in the beginning could undermine the entire implementation and will result in higher costs later on.

4.2.   IT infrastructure and organization

With the information from the interviews and the possibilities in the market, we looked at the following three scenario's:

1. The HCCH keeps its local IT infrastructure.
2. The HCCH migrates its infrastructure to the cloud.
3. Other alternative or hybrid solutions (if applicable).

When choosing for Microsoft 365, it is by far the best to migrate the infrastructure to the cloud. Although this research project primarily focuses on the difference in functionality of both solutions, it is the right strategy for now to choose for the cloud. Worldwide cloud services are getting more popular and some software will soon only be available in the cloud. Especially with the (small) number of employees of HCCH a cloud strategy makes sense. Besides, it will be difficult and quite a hassle to implement MS 365 locally.

Choosing SharePoint in the cloud will affect the current IT organization. It can implicate some hardware savings. At the moment HCCH has three servers, when migrating to the cloud, two might be enough.

When migrating to the cloud, people usually have questions about the safety of their sensitive documents (for example HRM files) while in fact the situation might improve. Since local applications can't be used from outside the office, employees use Dropbox, USB's or mail documents to their private accounts. With a web-application there is no need for these methods anymore.
Besides that, the security measure of a good cloud supplier will be of a higher quality than most organization can realize locally.

On the other hand, HCCH will need to develop <u>in-depth knowledge </u>of Microsoft SharePoint to realize maximal results of the software. To make sure there is always enough knowledge and to prevent vulnerability, we recommend to train a least two employees.

There are several companies that provide more advanced courses for SharePoint, for example:

- http://goopleidingen.nl/haal-meer-uit-sharepoint[9]
- https://www.u2u.be/Search?q=sharepoint
- https://www.ettu.nl/adoptie/
- https://qnh.eu/diensten/

4.3. Planning

The first step is to find a good partner to realize the new SharePoint solution. To get a more in-depth insight in the costs we recommend to contact multiple organizations to make an offer. Companies that can be contacted are:

- http://www.fairpoint.coop/[10]
- https://www.motion10.nl/
- https://qnh.eu/
- http://www.perfectviewcrm.nl/
- https://www.ettu.nl/

The total project will take at least 6 weeks to create a functional platform. The first weeks will be needed to make an in-depth analysis on how SharePoint should be configured and how to migrate the documents and contact cards from RBS. We recommend to migrate all content at once to minimize the period of using two systems.

When the functional platform is ready, the organizational implementation will start. If the Document Management structure and working procedures have to be changed, this will take up to 6 months to realize.

In the first months, employees will be less efficient as they would normally be. A loss of productivity needs to be taking into account.

4.4. Risks

The biggest risk to not making SharePoint a success for HCCH is the development and maintenance of rules and procedures on information management. As long as it is not clear for employees which procedures to follow, no software solution can be implemented successfully. Not having clear procedures, as understood by us in the interviews, is also one of the biggest complains at this moment when using RBS.

The other big risk for HCCH when using SharePoint is wanting to much. SharePoint, as a solution or software platform, doesn't have much limitations. All needs can be fulfilled with custom software added in SharePoint. We strongly recommend to start simple and to make only use of the standard functions of SharePoint, with the only exception the add-in for email integration.

4.5. Human costs

All employees need to be trained to make use of the new software. Training will cost from a couple of hours per person as a minimum to a full day, depending on their currents ICT skills and the ambition of HCCH. Training for the end users could be given by someone within the organization. Basis SharePoint training for specialized employees start at around € 500,- for one day basis training.

HCCH PerfectView replacement

Aeon Service ICT
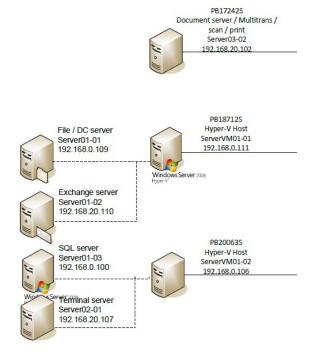**Report based on the IT Study performed by KBenP.**

Contents

Various kinds of data

#	Information type	Stored on server
A	PerfectView related data	Server01-01
	Letters and e-mails	
	Scanned documents	Server03-02
B	Financial and personnel related data	Server01-01
C	User data (private)	Server01-01
D	Company data (ShareDat)	Server01-01
E	Scanned documents (Document server)	Server03-02

PB17242S
Document server / Multitrans /
scan / print
Server03-02
192.168.20.102

File / DC server
Server01-01
192.168.0.109

PB18712S
Hyper-V Host
ServerVM01-01
192.168.0.111

Windows Server 2008
Hyper-V

Exchange server
Server01-02
192.168.20.110

SQL server
Server01-03
192.168.0.100

PB20063S
Hyper-V Host
ServerVM01-02
192.168.0.106

Windows Server 2008

Terminal server
Server02-01
192.168.20.107

Budget

License price

- 29 permanent staff
- 5 temporary staff (on 1 year contract)
- 8 interns (from 2 to 6 months)

Business essentials	Business Premium*
SharePoint, Exchange and an online version of Microsoft Office	SharePoint, Exchange and a full license of Microsoft Office for installation on 5 devices of the same user
€ 4,20	€ 10,50

Staff	#	Business essentials	Monthly
Permanent staff	29	€ 4,20	€ 121,80
Temporary staff	5	€ 4,20	€ 21
Interns	8	€ 4,20	€ 33,60
Total monthly costs			**€ 176,40**

Staff	#	Business Premium	Monthly
Permanent staff	29	€ 10,50	€ 304,50
Temporary staff	5	€ 10,50	€ 52,50
Interns	8	€ 10,50	€ 84,50
Total monthly costs			**€ 441,50**

* Microsoft recommends the use of Office Click to Run (CtR) version (part of Office365 Business Premium) instead of the traditional Office2016 licenses. The CtR version is updated more frequently and in sync with ongoing development of SharePoint.

The online version of Office (Word, Excel etc.) does not have the same functions and capabilities as the locally installed version of Office. The Business Premium subscription contains a license of Office for installation on 5 machines of the same user. It can therefore be installed on a pc at home a tablet etc.

Migration costs

Data type A
Aeon can perform the migration of PerfectView related data with a specialized partner. We have contacted two partners who would like to schedule a meeting to discuss the options.

Data type B, C and D
The migration of data B, C and D is relatively straightforward and can be done with minimal downtime and hindrance.

Data type E
The options for migration need to be investigated

The configuration and migration cost will depend on the chosen scenario's and CRM system. The costs mentioned in the IT study done by KBenP can be used as indication for the actual costs.

Migration

Migration of metadata.

Not all metadata can be migrated to SharePoint. During the design of the SharePoint environment it will become clear which information will be lost.

The migration can be finished before July 2017.

Training

Users need to be trained in the use of SharePoint. The training (1-day training) can be given in the Office of HCCH or in a training location in The Hague.

CRM

- PerfectView is a CRM application with document management system (DMS) capabilities.
- SharePoint is a DMS with some CRM functions.

Has the impact of the loss of PerfectView CRM functions been investigated? In the report of KBenP we miss the choice for a CRM application.

In the e-mail send to us by Stuart, Charlotte mentions the choice of CRM and asks for a suggestion and an indication of costs.

The choice of CRM application needs to be made preferably before the migration to SharePoint. We would recommend Microsoft CRM (Dynamics) since Microsoft CRM which works seamlessly with SharePoint.

E-mail (Microsoft Exchange)

In Office365 the use of an Exchange e-mail server is included rendering the on premise Exchange server obsolete. A migration to Exchange online could be contemplated. The IT Study by KBenP does not mention a migration of the e-mail to O365.

Infrastructure

The migration to the Cloud has impact on the design of the infrastructure (see appendix). Fewer servers are needed. The file server the mail server and the terminal server could become obsolete. This would lead to one less server. The functions of the other servers could most probably be placed on one reaming/new server thus eliminating 2 servers from the network.

An extra internet connection is needed since internet outage will lead to downtime.

Thin clients cannot be used after migrating to the Cloud. This has impact on Interns the hearings in the Peace Palace and the drafting commission.

Maintenance and support

The need for server maintenance and support diminishes due to the migration to Office365. The need for 3 physical servers is no longer there. One physical server should suffice.

Workstations will play a more important role in a Cloud infrastructure. They need to be maintained in a different manner since the server that performed some maintenance tasks is no longer available.

Current support contract SLA Fixed price Annual fee € 36.144	Future support contract SLA Fixed price Annual fee € 33.000
Helpdesk	Helpdesk
Server maintenance (3 servers)	Server maintenance (1 server)
Desktop maintenance	Desktop maintenance
Infrastructure maintenance, router, firewall, switches, Wi-Fi	Infrastructure maintenance, router, firewall, switches, Wi-Fi
Monitoring of servers	Monitoring of server
Monitoring of back-up (servers)	Monitoring of back-up (server and SharePoint and Exchange)
Support during hearings	Support during hearings
Installation of servers, pc's, laptops etc. included	Installation of servers, pc's, laptops etc. included
Weekly visit of support engineer	Weekly visit of support engineer
Weekend and after office hours support	Weekend and after office hours support
Service Delivery	Service Delivery

Multiyear budget

Cost savings

By moving to the cloud costs can be saved.
- Recurring investment in hardware and software is no longer necessary
- The costs for maintaining and backing up of servers decrease.
- Insurances and energy costs can be saved

Extra costs

Other recurring costs must be anticipated
- Extra internet connection
- Replacement of the pc's at the peace palace
- Back-up subscription for Microsoft Exchange and SharePoint

Cost saving

Type	Yearly cost saving
Recurring investment in servers based on a 5 year depreciation	€ 6.000
SLA Aeon	€ 3.000
Server back-up	€ 1.200
Energy costs	€ 1.000
Estimate yearly cost saving	**€ 11.200**

Extra costs

Type	Monthly costs	Onetime costs
Ziggo internet connection	€ 102,50	
Onetime setup costs Ziggo		€ 1000 (estimate)
Replacement pc's Peace Palace		€ 550 (per pc)
Office365	€ 441,50	
Back-up subscription O365 e-mail	€ 75 (42 mailboxes)	
Back-up subscription SharePoint	€ 0,50 per GB	

Training costs

Training	
1 day SharePoint user training for a group of maximum 8 people course material for 8 people included. In training location in The Hague or in the Office of HCCH.	€ 1.500
1 day SharePoint site administrator training for a group of 8 people course matrial for 3 people included. In training location in The Hague or in the Office of HCCH.	€ 1.350

Risk analysis

- Security (overall)
- Single internet connection
- Temporary loss of staff productivity
- User adaptation need for training
- Possible loss of Metadata

(see Appendix below)

Appendix   Aeon Service ICT 23 January 2017