



**WIS@key Identity solutions  
for  
Microsoft Citizen Service Platform**

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# 1 WISeKey's Vision on CSP



Most citizen services cannot exist without some form of identification of both the citizen and the public employee or government entity authorised to provide the service. WISeKey's approach to identity in e-government contexts has been the result of many years of experience, research and the execution of sensitive projects in different domains, both public and private. In doing so, it has developed a series of identity-centric guiding principles, embarked on a series of international initiatives that now enable it to address the 4 Layers (Key Challenges, People and Processes, Applications, and Technology) that Microsoft has identified for a comprehensive approach to Citizen Services Platforms. WISeKey also leverages its partner relations to

make possible a comprehensive approach with a long-term view of the customers' needs.

## 1.1 WISeKey's Identity-Centric Guiding Principles:

### **Assume Multiplicity of Identity Systems:**

We assume that the reality on the ground is that there are already (and will continue to be) analogue and digital identity systems in place of different types (e.g. login/password, digital certificates, national ID cards, biometrics, social security cards, pension cards, etc.) managed by different local or national government organizations. This diversity needs to be assimilated by understanding the cycles and management policies associated with the different identity types.

**Balance Needs:** A delicate balance needs to be stricken between security, privacy and ease-of-use and doing so involves unique approaches to each of the "Personas" (citizens, businesses, elected officials and public employees) and even to each individual and his or her specific needs and desires. For example, citizens should have the right under certain circumstances to express themselves online anonymously, much as they could do on the street provided the laws are respected.

**Strive for Identity Convergence:** WISeKey seeks convergence of the old and the new identity systems where possible (with or without the involvement of the managing government organizations) so that the interaction of the end user with the new services is completely transparent.

### **Address the Unique Needs of Each User**

**(Semantic Validation):** An individual may have multiple Personas and very different needs to those of other individuals. For example, an individual can be a citizen and an elected official. WISeKey enables the CSP to recognize the Persona an individual is acting as and provides the identity information that allows the customization of the interface accordingly. Even as a citizen, the needs may vary (e.g. student, certified professional, pensioner, etc.) and the identity validation system enables this differentiation.

### **Public/Private Collaboration on ID systems increases Relevance:**

People are increasingly taking control of the technological tools they use to interact online. The government services (to all "Personas") need to take this into consideration and seek to integrate the tools already being used by individuals or made available by businesses.

### **Maximize the Synergies Across Services:**

Innovative and game-changing synergies can be found across services that were not understood before or were not possible. WISeKey's approach on Identity Convergence enables these synergies to be discovered by citizens, businesses, elected officials and public employees. For example, automatic creation of online communities around issues of common interest based on the information voluntarily shared by citizens or any other Persona.

## 1.2 WIS@key and the 4-Layer Model

Based on these guiding principles and using as a framework for describing WIS@key's vision on CSP the Microsoft 4 layer model (Key Challenges, People and Processes, Applications, and Technology), WIS@key's

added value to the citizens, governments as well as our partners in the implementation of small or large CSP projects can be summarized as follows:

The 4 Layers	WIS@key's Identity Convergence Approach
<b>Key Challenges</b>	WIS@key has assessed the key challenges and identified where its identity-centric offering can be used to address those challenges in an increasingly effective manner. We have prepared a matrix as well as a brief description in this document.
<b>People &amp; Processes</b>	<p>In all aspects of both the people and processes, WIS@key's identity-centric view of the CSP is essential as very few citizen and/or business services are possible without a conscientious management of identity issues. The same is true for internal operational matters of government both for elected officials and government employees. <b>Essentially, our identity approach is able to semantically adapt the individual's interaction with the CSP depending on their "Persona".</b></p> <p>Furthermore, WIS@key has the know-how and deep experience in advising on and undertaking regulatory changes regarding identity-related issues. This includes embedding identity-related processes into already-operational business processes with well documented procedures that can be adapted to real-world environments in both public and private sectors.</p>
<b>Applications</b>	<p>WIS@key's identity solutions are standards based and are regularly integrated into all sorts of applications for diverse reasons, being compliance, cost reduction, increase in operational efficiency, traceability and confidentiality some of the key drivers for our business. In the government services environment this is even more evident because many of the standards used by WIS@key are now being incorporated widely into national identity cards, health cards, social security cards, driver's permits, enterprise ID cards, and others. WIS@key is able to provide this both as in-house systems or fully managed, depending on customer needs.</p> <p>It is also important to note that WIS@key's CertifyID suite is built on the Windows Server Platform (it was the first security enhanced product to be certified for Windows Server 2008 worldwide) and tightly integrates with the MS product families.</p>
<b>Technology</b>	WIS@key's traditional business has been closely associated with the core infrastructures of organizations. As the systems and maturity levels have evolved, WIS@key has evolved with it. From Web 1.0 to Web 3.0, we've had our equivalents of eID1.0 to eID3.0. Today we constantly face with our customers the increased security needs of service oriented architectures, the need for mashups, and increasingly, the need to achieve identity convergence across identity systems, applications and platforms and to take them through to the Web3.0 possibilities through semantic identity validation systems.

### 1.3 The Digital Divide, WISeKey's Global Initiatives and the CSP

**Privacy, Security**, and widespread **Access** to information and communication technologies are all issues that WISeKey and its founders have sought to address since its establishment as essential for its success and critical issues of our time for society as a whole. As many have talked about the "Digital Divide" that needs to be overcome to make the benefits of IT truly global, we have talked about the "**Identity Divide**", which is the problem of a person not being counted or "not existing" because they simply do not have an appropriate identity credential. We have seen manifestations of this throughout history in the form of countries not issuing certain citizens with identity credentials as a form of discrimination (e.g. impeding access to health benefits, suffrage rights, etc.) or more recently in the case of countries that do not issue their citizens with the new biometric passports, (the absence of which resulted in increasing difficulties to travel). To overcome these challenges, **which are an integral part of any Citizen Services Platform**, the following initiatives provide an indication of the work WISeKey is undertaking internationally:

#### The OISTE Fondation (International Organization for Secure Electronic Transactions)

The OISTE is a non-for-profit international Foundation based in Geneva, Switzerland. Founded in 1998 with the objectives of promoting the use and adoption of international standards for secure electronic transactions, expand the use of digital certification and ensure the interoperability of certification authorities' e-transaction of global Public Key Infrastructure (PKI). The OISTE Foundation and WISeKey have developed a unique "**Trust Model**" in which the foundation owns the Root Cryptographic Keys used by the PKI and WISeKey is the operator. WISeKey has deployed infrastructures across the world to both public and private sector organizations enabling them to communicate securely.



WISeKey, the World Trade Center Geneva and the ITU-D sector collaborated towards the establishment of an operational Electronic Commerce Developing countries (ECDC) initiative and a series of projects such as the Global Partner Program and World e-trust, among others to enable security for all. In this partnership, WISeKey has proposed world-changing ideas such as the establishment of the [Digital National Sovereignty](#) presented to the World Summit on the Information Society in 2005.

#### The Global Digital Solidarity Fund (DFS / FSN)

The DSF is an initiative launched by the President of Senegal, H.E. Abdoulaye Wade, during the World Summit on the Information Society (Geneva 2003 and Tunis 2005). The DSF proposes an innovative financing mechanism for development, specifically designed to reduce economic and social disparities. The "1% digital solidarity" principle will be devoted to finance telemedicine units in Africa (mobile hospitals), partnerships in tele-education and other projects. WISeKey was the first company to join the DSF in 2005.



#### The International Telecommunication Union (ITU)

The ITU is the telecommunications specialized agency of the United Nations, based in Geneva, Switzerland. Since 1999, WISeKey and ITU initiated a long term partnership that resulted in the development of a global PKI for developing countries. Over the years,



## The Geneva Security Forum (GSF)

WISeKey, the City of Geneva, Palexpo and MCI Events joined efforts in 2006 to create the first global conference designed to facilitate communication between security professionals, governments, international organizations and other interest groups to anticipate the changing global security environment, promote solutions and discuss policy trade-offs. The GSF is a neutral platform at the leading edge of the security debate offering a global, high-level and multistakeholders forum to address the implications of political, commercial, technological and criminal trends. The GSF is a unique annual two-day international security conference, showcase and training center in Geneva, Switzerland.



## The Clinton Global Initiative

The Clinton Global Initiative (CGI) was started in 2005 by the former USA President as a non-partisan catalyst for action, bringing together a community of global leaders to devise and implement innovative solutions to some of the world's most pressing challenges. As



an active member of the Clinton Global Initiative, WISeKey, in cooperation with the OISTE Foundation, will help reduce the gap between the new Digital Identification Divide in less developed countries and emerging economies by creating the infrastructure that will make a de-facto global digital identity community of 1 billion digital identity users while providing equitable and meaningful access to digital information technology.

## The Euro Malaga Hub

The Euro Malaga Hub is a state-of-the-art technology and business infrastructure operated from a new Generation World Trade Centre (WTC) in Malaga, using the facilities of the Technology Park of Andalucía (PTA) and its unique geopolitical location. The WTC Geneva, the OISTE Foundation and WISeKey are currently supporting the City of Malaga's objective to become the new technology and business HUB for Europe, with the aim of optimizing economic, social and cultural relations between Europe, the Mediterranean, Africa, Latin America and Asia. This initiative has recently received a substantial boost by the announcement of President Sarkozy (during France's Presidency of the EU) to establish a Mediterranean Community and with a key meeting taking place in Malaga in Q4 of 2008.

## 2 WISeKey's Innovative Approach to Identity in e-Government

The intellectual property of WISeKey is all about identity authentication, data portability and embedding it across diverse devices and platforms and across online services, and attributes associated with it within devices and business processes as well as extracting their value through online services.

In much the same way that any citizen has a lifecycle, so too businesses, elected officials and public employees have cycles in their respective "Personas". Additionally, within each Persona, the diverse identities they hold and use also have their respective cycles. In any CSP and e-government system, it is essential to understand these cycles well to leverage the power that they have to offer.

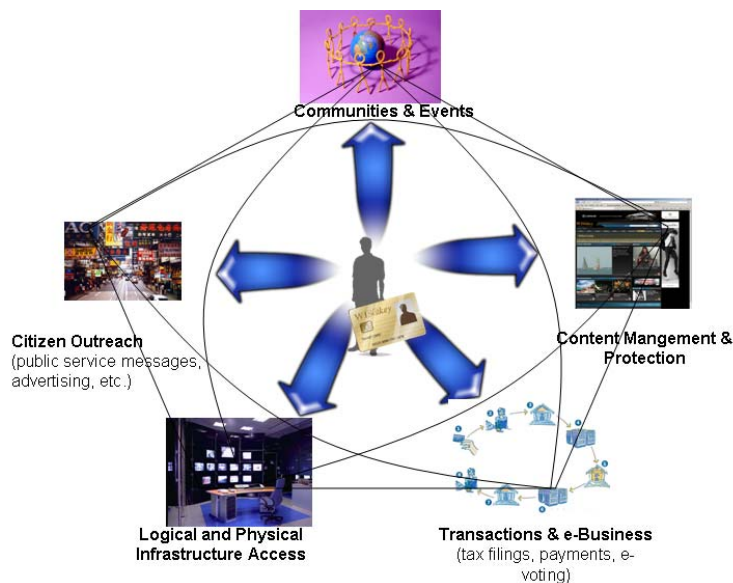
To leverage that power, the development of the Internet and mobile technologies offer ever-increasing application opportunities for digital identities. The surge of Web 2.0 and Web 3.0 technologies means that online identity services can be added to virtually any online transactional service and that identity and its associated attributes can be fully exploited to provide personalized

services to highly profiled users.

WISeKey and its partners provide a full array of enabling solutions for these services, ranging from wireless internet access solutions to maximize user reach, social networking capabilities allowing community interaction, to transactional systems for a wide array of purposes, to geo-localized services and targeted mobile marketing.

WISeKey's leverages its secure identity technologies, in 5 main vectors as described that drive the innovative implementation of technologies across government, namely (1) communities and events, (2) secure content management and protection, (3) citizen outreach and advertising, (4) Transactions and e-business, and (5) logical and physical infrastructures enabling online and IT based services.

This combination can be integrated in the Citizen Services Platform to enhance its scope and appeal. The execution of this innovative approach is manifested comprehensively through our WISeCities and WISeMed Platforms briefly described below.



### WISecities

*WISecities responds to the needs of citizens and public service entities by leveraging the Web 2.0 and Web 3.0 functionalities. The "digital identity centric" platform allows citizens to benefit from smart technology that enables to be at the forefront of social and economic development. Building on the international initiatives it has embarked on, WISeKey has been working closely with governments and municipalities around the world on technology and policy issues that address ICT specific needs to secure interactions between governments, municipalities, educators and non-profit organizations.*

*One of the major challenges that local authorities have to face is the rapid urban expansion and, therefore, growing demand for public services such as taxation, housing, education, nursing, migration management, employment, transportation, water, energy, sanitation, and disaster prevention. In all of these key critical areas, WISeKey constantly seeks to orient the implementation of its ID-centric projects towards helping to solve one or more of these issues.*

***"The Mediterranean, north and south, is forming a single economic unit: Europe should make it a powerful one"***

The Economist, July 10<sup>th</sup> 2008 Edition.

***"We are living through a crisis; and because we have failed to respond properly, we are heading towards a disaster. Our settlements are lagging behind the world's progress, our ideas are confused, we are moving without coordination and adjustment and we have not defined our role."***

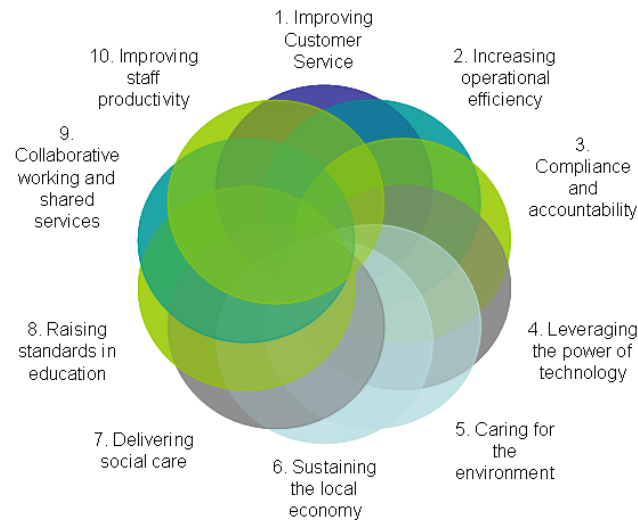
Constantinos A. Doxiados, *Ekistics: An Introduction to the Science of Human Settlements* (1968).

### WISeMed (Digital Mediterranean Space)

*WISeMed responds to the strategic importance that the EU gives to Mediterranean economies and the challenges these regions have to cope with today, in particular the increasing digital and cultural divides. As part of its WISecities approach, it is launching a project in the Mediterranean region through a platform that provides tools for collaboration that address regional governance requirements to enhance communications or interactions between Mediterranean economies and reduce the gap between expectations and currently available ICT services. This platform offers tools for better integration and sustainable development in the region. It encourages the bilateral and regional partnership dimension and will strengthen relationships between Mediterranean citizens in order to create a Mediterranean identity ("I'm Mediterranean") based on specific regional attributes (language, nationality, age, professional activity, etc).*

### 3 WISeKey and the Key Challenges

Local governments today face a series of challenges that impact their organization from top to bottom and across departments and structures. Overcoming these challenges is necessarily a multidisciplinary effort with identity issues squarely fitting in most of the challenges as instrumental to addressing them in an efficient manner. The key challenges are the following:



WISeKey has assessed how it can help local governments overcome the key challenges (see summary table in Annex 1 of this document:

#### 1. Improving Customer Services:

WISeKey has worked hard in improving customer service in many domains by enabling old as well as new services online at a lower cost through the use of strong authentication and the transactional functionalities afforded by digital signature technologies.

Because the validation of identity face to face is not required when a strong electronic authentication mechanism is in place, a transaction that before meant visiting a government office, can now be undertaken remotely and at any time. Furthermore, the security features of certain electronic identity technologies, enable both confidentiality and ensuring the legally binding nature of the transactions performed.

#### **Healthsign - COMG (Collegi Oficial de Metges de Girona), the College of M.D.'s (Spain)**

*Improving customer service was at the center of our mandate with the COMG (Collegi Oficial de Metges de Girona), the College of M.D.'s in the province of Girona, Spain. WISeKey created a secure electronic credential system that can also be used as evidence of medical credentials online. The main service driving the need for this system is the electronic prescriptions services which allows doctors to send them electronically instead of imposing on patients to visit them at their surgeries each time they are in need of one. This also provides an additional layer of security against forged prescriptions as pharmacists can validate the electronic prescription with a greater degree of security than a paper-based prescription.*

## 2. Increasing Operational Efficiency:

Information and communication technologies are widely recognised to increase operational efficiency when properly implemented and structured around the business processes of an organization. To ensure operational efficiency, it is critical that the users of the system have trust in its security and reliability in the information being processed as part of the increased operational efficiency. This can only be done if security policies are in place linked with a diligent management of identity systems adapted to the tasks involved. Otherwise, any potential increase in operational efficiency is lost with the lack of trust in the information and processes.

WISeKey has considerable experience in embedding identity systems into business processes for the purpose of achieving greater operational efficiency. One of the fundamental issues that arise time and again is reaching just the right balance between security and ease-of-use because what may be just enough security for one process may be overkill in another business process, with a net negative impact on the operational efficiency.

## 3. Compliance and Accountability:

Increasing compliance and accountability is an essential part of any digitalised workflow process. In public administrations, this takes on a whole new meaning because many of the processes need to have some formal legal recognition as an "administrative procedure". It is therefore critical that appropriate security, integrity and authenticity mechanisms exist to ensure that the increase in operational efficiency resulting from digitalised processes does not result in legal and regulatory problems later.

Frequently, addressing this challenge means not just analyzing the regulatory framework in place to determine what technology may be used but also advising on changes to the regulatory framework. Furthermore, compliance and accountability is not just about technology and its compliance but also in the processes and training for the use of the technology. WISeKey is a recognised specialist in this field as its experts have been involved in the drafting of key legislation worldwide such as the UNCITRAL Model Law on Electronic Signatures and the European Commission Directive on Electronic Signatures. It is regularly involved in the design of technical platforms, processes and training of staff to ensure compliance and accountability are achieved.

### **Ministry of Foreign Affairs of a Country (Confidential Customer)**

*The Ministry of Foreign Affairs of a country needed to increase the efficiency of its diplomatic processes and reduce their dependency on the traditional diplomatic pouch system which, albeit secure, was very slow and resulted in diplomatic personnel recurring to unsecured email communications to exchange secret information with other government officials.*

*WISeKey designed and implemented a system to secure communications in the Ministry of Foreign Affairs and between the Ministry of Foreign Affairs and external diplomats including:*

- *online access to an internet site of the Ministry;*
- *secured access to post and consult certified and/or encrypted documents;*
- *secure and trusted exchange of e-mails (combining biometrics, digital signatures and encryption) between Ministry diplomats and diplomats in other countries.*

### **International Tribunal (Confidential Customer)**

*The customer has stringent policies based on its Statute and regulations that imply an exceptional level of security and confidentiality for the information handled by the court. Strict internal and external communications and access policies and regulations exist due to the highly sensitive nature of their work. The customer wanted a solution that could be integrated swiftly on top of its existing architecture while being user-friendly and easy to implement.*

*WISeKey defined and implemented a complete solution offering following functionality:*

- *windows Smartcard login;*
- *single Sign On access to desktops and applications;*
- *trusted document signing and archiving;*
- *secure email communication enabling digital signature and encryption;*
- *electronic signatures in document workflow to implement the Court's procedures.*

#### 4. Leveraging the Power of Technology:

The promise of technology seems limitless but all too often it is vastly underused. WISEKey constantly strives to deliver the maximum power of the technology being implemented taking without losing sight of the real needs of the customer. Because of WISEKey's unique capacities and international neutrality, it is frequently requested to perform highly sensitive projects that require leveraging the power of technology as much as possible.

In the case of the identity solutions provided by WISEKey, it has meant overcoming conventional views on how secure electronic identity can and should be used. As a result, we have developed creative solutions that allow, for example, the reliable electronic identification of an individual whilst maintaining the confidentiality of the choices made and the impossibility to cross reference the two. Other examples include the use of cutting edge quantum cryptography for the purposes of ensuring extreme security in information exchanges.

#### 5. Caring for the Environment:

WISEKey's core business is naturally and ideally aligned with eco-friendly initiatives as the identity solutions it provides are designed to eliminating the use of paper and the use of transportation systems to transfer pieces of paper from one location to the other. "Dematerialization", as it is known, generally means using technologies and processes that need to ensure compliance with local law which, as stated before, WISEKey excels at.

Government processes are paper-intensive which makes them ideal environments in which to implement dematerialization projects that have substantial positive impacts on the environment. In doing so, it is essential to ensure long term archival and ongoing legal validity are assured.

Dematerialization can have an impact at many levels: from digitalizing administrative documents to public transportation ticketing systems and from scanning, storing and making digitally accessible old paper-based archives to eliminating the need to travel to government offices because the services can be provided online. In the cases in which this

##### **World First Internet Voting System (Canton of Geneva, Switzerland)**

*The Canton of Geneva worked with identity and digital trust specialist WISEKey. Using specialized public key infrastructure and other cryptographic technologies, WISEKey developed a solution to ensure the integrity of the security protocols and ballot box. The system was tested extensively and subjected to 'controlled hacking' by the University of Geneva and CERN (European Organization for Nuclear Research – where the World Wide Web was invented).*

*WISEKey's expertise in this field can be applied to any voting project (both public or in a restricted environment) and any situation where:*

- *strong authentication is needed;*
- *rights need to be confirmed and exercise of rights proven;*
- *anonymity of the individual and his actions need to be preserved.*

*Such situations are often found in the context of the health system, the judiciary system, etc*

##### **International Air Transport Association – IATA (Canada/Switzerland)**

*IATA issues tens of thousands of invoices every month that has an important operational cost in printing, delivering and storing all of the paper involved in the invoicing process. IATA needed a way to digitally sign PDF invoices in a legally compliant manner across many legal systems worldwide. WISEKey progressively analyzes the legal requirements per country and designed and evolved the legally-compliant technical platform and processes as countries are added to the system. The return on investment to IATA is extremely quick and the positive impact on the environment is huge. WISEKey is now helping IATA to expand the system to other documents beyond invoices.*

challenge is essential, measuring the impact should also be incorporated into the processes.

## 6. Sustaining the Local Economy:

Technology is widely used as a tool to not only sustain but to bolster the development of the local economy. Be it as a marketing tool to promote tourism, or the benefits of establishing a business in a certain location or an actual business transactional tool that is provided or supported by governmental entities.

Due to the fact that geographical boundaries are erased with online systems, the possibilities afforded to local businesses that cannot afford to invest in such technologies can benefit greatly to the extent that the local fabric of the economy can be transformed in the direction desired by policy-makers. However, for such systems to be scalable and successful, trust, security and legal certainty are required. Consequently, the use of trustworthy electronic authentication and transaction validation systems that can be recognised and used in any part of the world are essential. A wrong decision on the type of identity and authentication system used can have a devastating impact on the potential development of the local economy.

## 7. Delivering Social Care:

With an aging population there is an increasing amount of persons with reduced mobility. On the other hand, the excessive mobility of people during their working life results in less time available to take care of their personal needs. As a result, having the possibility of remotely interacting with social care services from the home, workplace, mobile phone or other device is a big advantage for large parts of the population.

In view of the important financial implications of the delivery of social care and the all too frequent fraud of the social care systems, having secure mechanisms that enable strong authentication are essential for the deployment of online delivery of social care. WISEKey thrives on this challenge as it regularly faces customers with varying degrees of security needs for online transactions. Our identity and authentication solutions provide the answer in a manner that is user friendly, secure and reliable, enabling delivery of social care whilst maintaining risks low.

### **Export Promotion Portal – Enterprise Mauritius (Mauritius)**

*From its isolated geographical location, Mauritius's industry relies on numerous intermediaries to import and export goods. Fields of activities such as textile are vertically fragmented and the interaction between the actors of the economy had to be rationalized. The Mauritius manufacturers, suffering from the severe competition from Asia and Africa, had to increase their visibility at an international level. Enterprise Mauritius therefore decided to establish a new on-line marketplace exposing local businesses to a wide range of international buyers from many sectors around the world. WISEKey delivered a fully functional portal including development, legal and marketing support, promotion and training with functions such as: digital certificates and authentication, purchasing (RFQ/RFP/Procurement), selling (Auctions, Online Shop), advertising (Company homepage, Events, News, 3D Exhibitions), and networking (Business Opportunities, Chat, Forum).*

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## 8. Raising the Standards of Education:

Educational institutions are increasingly using and reliant on online systems as the regular mode of interaction of their communities. From publishing the curricula of an academic year with the corresponding reading materials, to the posting of podcasts of the lectures delivered and taking tests online. The possibilities afforded by information and communication technologies is impressive. The same technologies can also be used, and frequently are used to impersonate students, alter testing, grades or research results, hack into academic networks and other undesired activities.

In certain experimental environments, for example, the assurance of the integrity of the research data and the restrictions on its access are critical to the research being widely accepted and recognised. The lack of attainment of such acceptance and recognition can result in millions being lost and the image of an academic institution being tarnished. All of these issues constitute aspects that ensure that standards of education are maintained and raised in any academic institution.

## 9. Collaborative Working and Shared Services:

Online collaboration and shared services increases exponential the productive capacity of groups of people and allows the development of synergies that were not thought possible or not thought at all. For governments, this is a great opportunity to revolutionize the way they operate and provide services to citizens. Small collaborative local initiatives can have huge impacts due to the synergistic effects of the collaboration.

In the online world, this frequently means using Web services and collaborative platforms such as Microsoft Sharepoint. However, making them available to a community (open or closed) creates vulnerabilities that did not exist before. All sorts of questions arise as a result regarding the security, privacy and ease of use requirements which will determine its openness and, ultimately, its success. WiSeKey's solutions provide a framework upon which the security, privacy and ease of use issues can be addressed in a structured and comprehensive manner.

### ***Gemini Observatory (Hawaii and Chile)***

*Gemini Observatory is an astronomical observatory which provides some of the world's sharpest images of the universe. Gemini Observatory recently discovered what, at the time, was thought to be the tenth planet in our solar system. The observatory wanted to increase IT security to prevent the early disclosure of such information. The organization sought to provide a safe environment with secure networks to protect research in the event of a system failure. The observatory collaborated WiSeKey to install the organization's secure ID system, which enables scientists to share research electronically through secure authentication. The WiSeKey Certif/ID solution, implemented at the Gemini Observatory, issues and manages the digital credentials of its collaborators.*

### ***DestiNY USA (Syracuse, NY)***

*Destiny USA, an upstate New York family destination, will have theme parks, hotels, shopping, golf clubs and a Research & Development facility, and will run solely on green energy. It is in essence, a project to create the city of the future.*

*Components required for the first phase of the project and delivered by WiSeKey included a multi-interface smartcard that enabled a collaboration and shared services across the complex community of contractors and devices as well as for their future guests. Varying degrees of authentication security were required to enable physical and logical access control, to accumulate loyalty points, to become the Identity Badge and ultimately enable cash transactions.*

## 10. Improving Staff Productivity:

The use of technology to improve staff productivity is generally due to the reduction of time-consuming processes that require moving people or objects from one physical space to another. In the provision of citizen services, this is also the case which means enabling all Personas to do more from anywhere and to do it quicker and at a lower cost. Furthermore, elected officials and public employees can now work from anywhere and anytime, allowing for increased satisfaction in their jobs which ultimately results in increased productivity.

As in the case of collaborative working and shared services, secure identification and ease-of-use are essential elements to achieve improvements in productivity without fear of a breakdown in the traditional and legal processes that are necessary for the provision of citizen services.

### ***National Bank of Kuwait (Kuwait)***

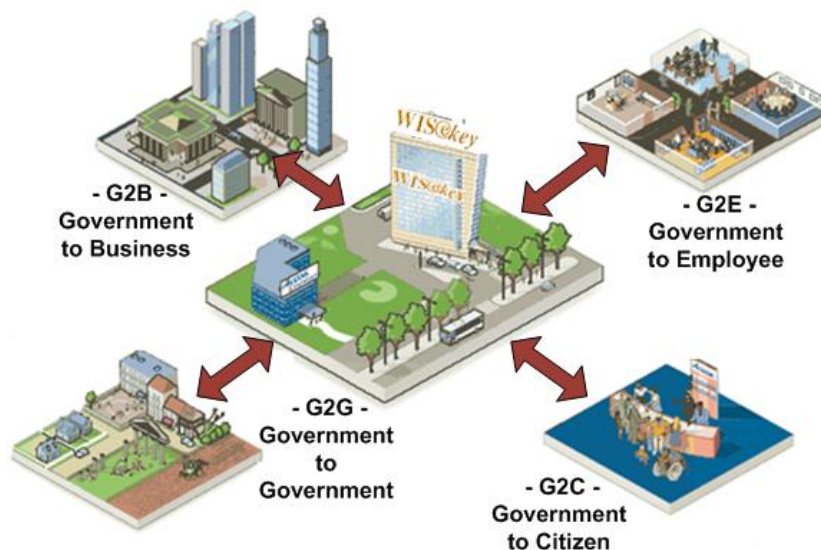
*NBK were looking for solution set that could leverage and optimize their investments and most importantly integrate seamlessly with their existing infrastructure (Domain, Active Directory, Outlook, etc.) in order to allow their staff to increase the amount of tasks they could perform online. They also wanted a scalable, cost effective and highly secure technology set to comply with the regulatory framework of the bank. The solution implemented by WISEKey for National Bank of Kuwait enabled internal, cross-departmental and external communications using trusted digital identities which had a net result in productivity improvements across the workforce.*

## 4 People and Processes

WIS@Key's approach, as the leading global provider of security, identity and trust solutions; rely on the concept that citizen service solutions should allow everybody to work, communicate and transact securely. This means improving security across all levels of governmental information systems, and respecting the citizen's right to be in control of their personal data.

Personal data protection and privacy is one of the key concerns for governmental entities and citizens. To address issues of consent, access, encryption, security and enforcement, data integrity and onward transfer, all parties concerned need to know that personal information is being used appropriately. In order for these concerns to be addressed consistently, appropriate processes need to be put in place as part of the normal operating procedures.

WIS@Key supplies a set of standard tools and technologies, based on digital identity technologies such as Public Key Infrastructure (PKI) designed with Trusted Computing principles in mind and other complementary technologies that enhance security such as biometrics, USB crypto-tokens, smartcards and RFID tags digital signatures, that can be customized to the needs of specific administrations, but which maintain their standards-based functionalities and interfaces.



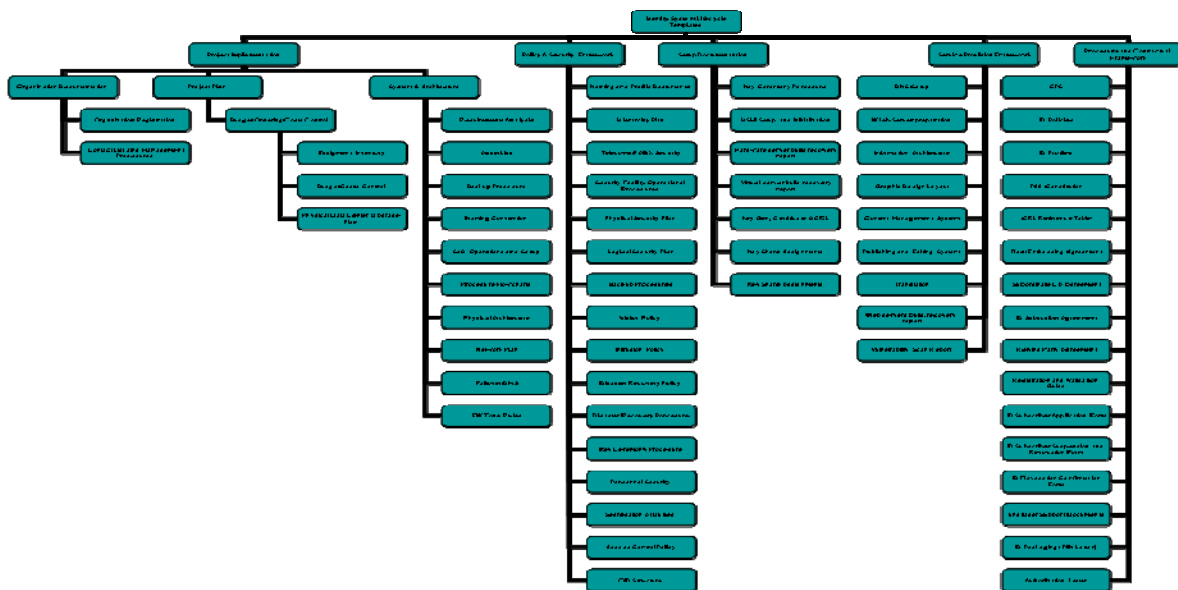
- **Government to Citizen (G2C):** Administrations at all levels become visibly open to the private individuals via Citizen Services Platforms. Thus making public services and public information secure and accessible to all is a must. The CertifyID Trust Center Platform is an industrial class Citizen eID management solution that manages users, and their credentials (especially digital IDs and digital certificates) for large scale applications. It is also a complete PKI and ID management solution that supports 24x7 government services, such as:
  - National, regional, municipal ID Cards: Such solutions enable modern identification systems which allow citizens to access local, regional or central citizen services and conduct secure transactions. The solution also provides citizens with improved secure and intelligent identity documents.
  - eHealth: Health services require a wide variety of data and information, which need to be collected, processed, distributed, accessed and used - securely and respectful of strict ethical and legislative rules.

- eVoting: Voting systems have complex requirements where anonymity of voters needs to be strictly respected, while ensuring that the 1 person = 1 vote rule is strictly respected.
- **Government to Business (G2B):** Comprising the online filing of legal documents and reports, electronic invoicing, etc. These relationships include also purchasing and vendor management for the products and services used by the government. This type of transactions is usually governed by a variety of legal regulations. Solutions implemented with WISEKey technology fulfill such requirements.
- **Government to Employee (G2E):** The online administration of employee services, including payroll, attendance and job benefits. This type of transaction is usually governed by employment and privacy regulations and can be carried out via secured web portals via WISEKey's digital identity systems.
- **Government to Government (G2G):** These interactions among government organizations, departments, and authorities can be divided into those that are designed for internal facing (within a single governmental entity) and for external facing (sewing together diverse governments IS systems). In both scenarios security is a critical issue, given the nature of the exchanged information. In some cases, it could be classified as secret. In all cases, security should be achieved seamlessly.

Built using Microsoft's and WISEKey's combined expertise in CSP systems, security frameworks and identity systems, the CSP can be fully integrated into the e-government framework and integrated into a nation's e-government services delivery framework. The solution encompasses all the essential CSP attributes and functions and spans the totality of a citizen's life events.

### Identity System Templates

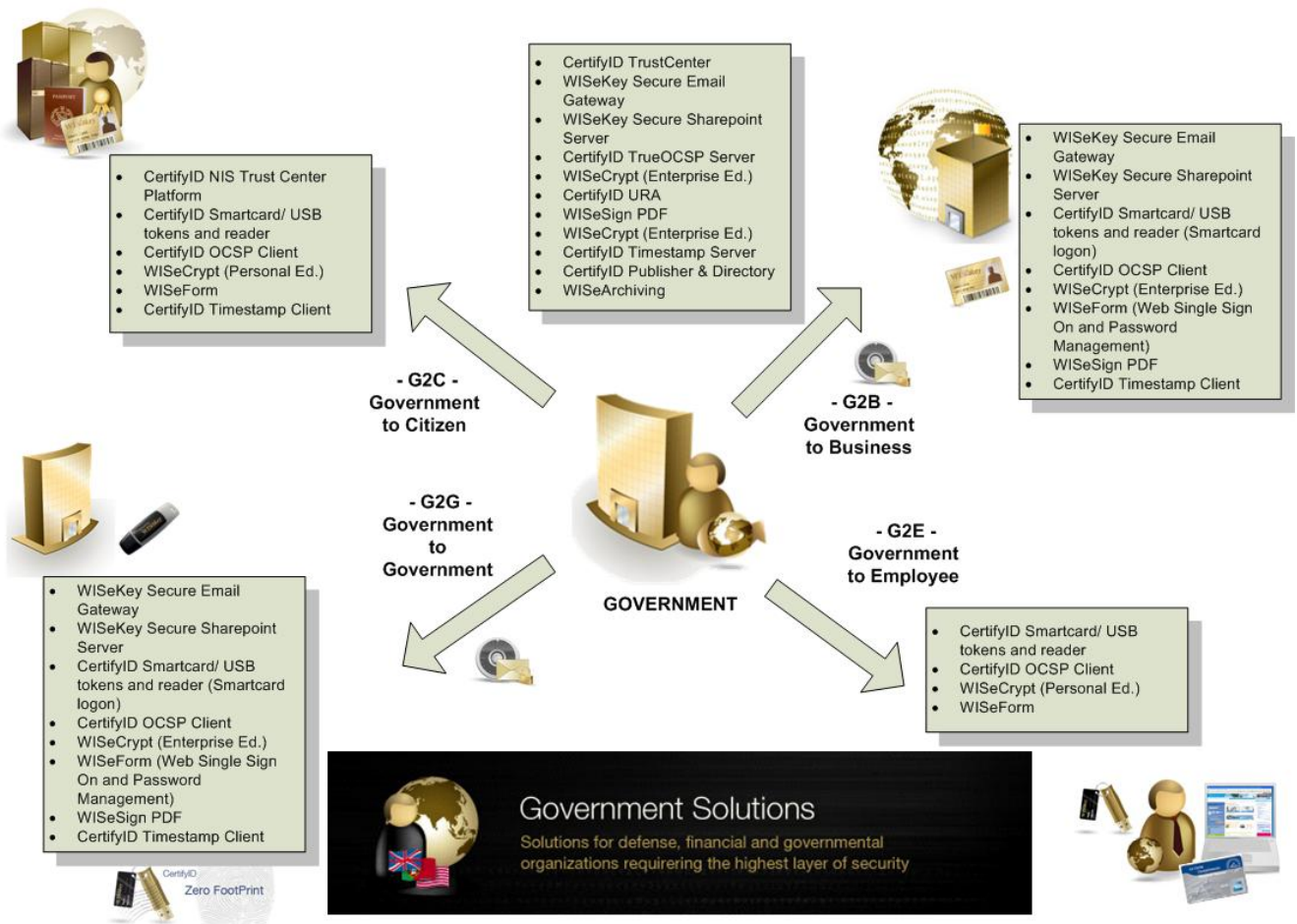
For the implementation of these solutions, WISEKey has developed over a period of many years a document template set that addresses all aspects of identity-related processes which can be fully customised to the processes already in place in any context, both private and public. The templates cover aspects from identity system project design, project management and cost management all the way to the management of the individual identity lifecycle management. The following diagram is a typical template set for a comprehensive secure identity setup and operation.



## 5 WISEKey's Value Added Solutions

WISEKey's CertifyID Platform solution is among the ID solutions provided by WISEKey that provides a comprehensive solution to digital certificates, public key infrastructure for eID management in the CSP and the establishment of trust management frameworks that enable governments and organizations to ensure control over the sovereignty of the identity systems. It enables citizens and other governments and organizations to trust eIDs issued and managed. Fully integrated into the Microsoft .Net Framework, the CertifyID Platform includes the creation and life-cycle management of electronic identities (eIDs) capabilities for the citizen and business services that allow eID checking and verification and interaction with the CSP.

WISEKey technologies provide the identity framework that supports the core of the applications aforementioned. WISEKey solutions for government interaction are depicted in the diagram below.



In addition to the solutions referenced in the diagram, WISeKey can provide a wide variety of other technologies and solutions that are able to provide a comprehensive approach to identities in the CSP. The following table provides an outline.

PRODUCT NAME	SHORT DESCRIPTION
<u><b>SecureMail Gateway</b></u>	A secure e-mail gateway that provides email security (including digital signatures, encryption, decryption) and content analysis mechanisms that protect organizations from spam and viruses, and help prevent e-mail violations before they occur by enforcing inbound and outbound content compliance.
<u><b>SafeGate</b></u>	Provides a secure VPN-SSL gateway by using a single appliance located on the target site and a simple user digital ID (x.509 certificates), a secured VPN remote access link will be established in minutes through any type of Internet browser, no need of any "VPN Client" nor "VPN Server" software deployment on servers or personal computers.
<u><b>bSigned</b></u>	<p>bSigned Electronic Agreement Systems is a browser based, PKI vendor-independent solution that manages agreement documents online with no change to workflow. WISeSign seamlessly integrates with MS Office 2003 and 2007.</p> <p>The bSigned EA System simplifies and centralizes electronic document management, combining fast, trustworthy and confidential electronic information exchange with legally binding electronic signatures, identity and integrity verification, time stamps and audit trails.</p> <p>The bSigned Electronic Agreement (EA) management system provides both electronic signatures that are legally binding equivalents to handwritten signatures and digital signatures that provide proof of validity (including identity), authenticity and integrity.</p>
<u><b>HighTrusted Social Network Platform</b></u>	Social network platform and components designed for use by highly trusted social network communities.
<u><b>WISeEvents</b></u>	WISeEvents combines WISeKey's existing products, professional and managed services to provide a highly trusted eID platform for high quality event ID issuance, management, and trusted social networking.
<u><b>Semantic Validator</b></u>	Performs semantic validation of digital identities.
<u><b>WISeFeed</b></u>	<p>WISeFeed delivers near-real time customized media feeds to users on their desktop. Users can receive the latest news on their football team, tennis tournament, Olympics games, Football tournament etc. It is freely distributable and its "skin" can be customized by media and content partners. For example, Alinghi can offer their fan community a free download of WISeFeed, with a customized Alinghi Skin. When viewing the Alinghi channel, WISeFeed uses the Alinghi palette and an Alinghi background image. WISeFeed displays Ads to the user which is customized to the content being viewed, and can be supplied by sponsors of the event/channel topic.</p> <p><b>Release 2009.</b></p>
<u><b>Telco TrustCenter</b></u>	<p>An integrated digital identity and mobile digital signature platform that forms the basis for new partnerships with Telco providers, and entry into new markets by assisting Telcos to unlock the value of their digital identity assets.</p> <p>See "Whitepaper – Digital Identity for Telecom Operators" – WISeKey SA.</p>
<u><b>WISeMobi</b></u>	<p>WISeMobi is a secure mobile device data (Address Book) storage and synchronization service.</p> <p>WISeMobi is a trademark of a separate company, called "WISeMobi Inc". WISeKey has signed an agreement with WISeMobi to provide underlying technology and services in exchange for licensing royalties.</p>

## 6 WISEKey CSP Partners



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## 8. Contact Persons

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