EUROPEAN COMMISSION

COMMISSION STAFF WORKING DOCUMENT

Report on the global schedule and budget for the entry into operation of the second generation Schengen Information System (SIS II)

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1. SCOPE

Following the successful outcome of the "Milestone 1" test, the Council invited the Commission to present a *binding global schedule and a solid and comprehensive budgetary plan* for the entry into operation of SIS II[1]. The Commission presented to the Justice and Home Affairs (JHA) Council of 3-4 June 2010 a revised project schedule whereby SIS II could be expected to become operational by the first quarter of 2013. No information on the budgetary estimate was given at that time, as costs for the completion of the project were mainly dependent on contractual negotiations still to be launched during the summer. Both the global schedule and the budgetary estimate are to be confirmed at the forthcoming JHA Council of 7-8 October 2010.

This report is also intended to inform in a transparent and timely manner the European Parliament, in its capacity of budgetary authority.

This report provides supporting information on the detailed global schedule and budgetary estimate, in particular the main assumptions and technical elements on which they were developed. It builds upon the intensive preparatory work carried out with Member States' experts and the subsequent negotiations with the main development contractor.

2. PROCESS AND METHODOLOGY

Throughout the SIS II project, the Commission has valued the partnership with Member States and national experts at all levels. At steering level this has been most evident in the Friends of SIS II (FoSIS II) group and the Article 36 Committee (CATS). At operational / project level, apart from comitology, cooperation has been very close in the informal National Project Managers Group and the SIS II Task Force. Furthermore, the status of the Global Programme Management Board (the "GPMB"), which has been very active in recent months, was formalised in June 2010[2]. All these different *fora* have contributed significantly to the elaboration of the present political and operational roadmap for the development of SIS II, as well as to the assessment of the system's final requirements and the definition of a new testing strategy.

On this basis, Commission services prepared updated technical specifications for SIS II and a detailed offer was received from the main development contractor on 6 August 2010. On 15 September 2010, following complex negotiations, the Commission and the main development contractor agreed on the contractual framework for finalising the project, and, in particular on a final global schedule and budgetary plan for the entry into operation of SIS II that are the basis for the present report.

The European Parliament has been kept informed of developments in writing and through oral presentations throughout the development of SIS II.

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[1] Political agreement was reached at the Justice and Home Affairs Council meeting of 23 April 2010.
[2] The status of the GPMB was formalised by Regulations (EU) No 541/2010 and 542/2010 of 3 June 2010 amending, respectively, Regulation (EC) No 1104/2008 and Council Decision 2008/839/JHA.

## 3.	EVOLUTION OF ASSUMPTIONS AND REQUIREMENTS

A key challenge in the development of the SIS II project has been the continuous evolution of the system's basic technical assumptions and requirements, which had an impact on the final layout of the SIS II legal basis (adopted 4 years into the project) and, implicitly, on the contractual implementation.

In the course of this year and further to the successful outcome of Milestone 1 test, the Commission and Member States have jointly sought, within the governance framework agreed for the project, to arrive to a definitive set of system requirements, aiming to achieve both a final realignment with the operational expectations of its users as well as an adaptation of the budgetary estimates for the completion of the project.

Accordingly, in May 2010[1], Member States' experts, Commission services and contractors reached a broad consensus on the future system specifications and test approach, which the Commission has included in the existing contractual framework and which forms the basis for the global schedule and budget presented in this paper:

- *System capacity*

The original specifications anticipated the management of 15 million records, increasing over time to 22 million. However, due to the expansion in the number of Member States using the SIS and the intensive use of the system by the competent authorities, by January 2010 the existing system had arrived at over 31 million alerts. On this basis, experts agreed that the estimated size of SIS II at go-live was likely to be 52 million alerts.

Accordingly, it was agreed that the system capacity at entry-into-operation should be increased to 70 million alerts and that SIS II should be tested with a view to ensuring a scalability up to 100 million alerts without the need for technical change. The scale of the system's volumetric growth would thus exceed the capacity and the scalability obligations as laid down in the initial contract.

This deviation from the original specifications has a significant impact on the hardware, requiring its adaptation and installation on several additional technical environments (dedicated hardware configurations for different development and testing needs).

In addition, such changes also mean that a significant number of tests that had already been carried out will have to be repeated at higher data volumes.

- *Performance*

The complexity of managing amnestied data led to a change of the contractual conditions for the system's performance requirements. There was a need to re-introduce, within the contractual framework, the maximum response times for central queries as well as for the handling of alerts[2]. These thresholds have been tailored according to Member State's business needs, with a tiered categorisation of transactions to give a clear priority to standard / routine operations, as follows:

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[1]	Minutes of the meeting of the SIS-VIS Committee, SIS II Technical formation, of 26 May 2010.
[2]	The handling of alerts entails the Creation, Update and Deletion of alerts (CUD).

– 99,5 % of standard queries must be returned within 1 second, the rest within 3 seconds. Longer response times have been associated to queries falling within the categories "inexact" ("partial"[1] or "fuzzy"[2] searches);

– 99,5 % of standard operations on alerts (Create, Update, Delete – CUDs) need to be handled within 3 minutes, the rest within 5 minutes, unless they contain particularly heavy binary attachments.

- *New testing strategy*

In order to alleviate risks at the stage of formal test campaigns (e.g. Milestone 2 or the Provisional System Acceptance Test), the new test strategy will be based on continuous / iterative informal testing with a limited number of Member States, which will allow for early identification of problems and bug-fixing. It will include all remaining test phases until the entry–into-operations of the system and will clearly establish the respective responsibilities of each stakeholder. It will, in particular, integrate the "Milestone 2" test[3] within the test plan and will spell out the test approach for the migration, which had only been partly addressed under the existing contract. The content of the comprehensive test and of all the tests required prior to and during the migration process has also been detailed in the schedule.

Testing activities have been parallelised to the maximum extent, but without compromising the necessary risk margins in the implementation of the schedule. This new approach requires, nevertheless, the installation of supplementary testing environments (as indicated above).

- *New Interface Control Document (ICD)*

Following an intensive period of negotiation and consultation with all relevant stakeholders, an updated Interface Control Document (ICD) was drafted together with the updated technical specifications. All agreed changes included therein, such as, but not limited to, those concerning system capacity, performance and testing mentioned above, will be reflected in the new system. Their potential impact at national level has been duly taken into account in the context of the preparatory workshops held in May/June 2010.

- *Management of obsolescence (COTS Upgrade)*

Complex IT systems, such as SIS II, typically include custom-made parts, but also so-called "commercial, off-the-shelf" (COTS)[4] software sub-components which need to be regularly updated. Whilst the existing contract provides that it is an obligation of the main development contractor to keep these sub-components up-to-date, sufficient time must be reserved in the plan to perform the necessary upgrades and corresponding tests. Nevertheless, these upgrades will be provided cost-free.

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[1]   For instance, using the search value "Dale" would find all name occurrences containing the pattern "Dale", including "VanDale", "VanDale-DeBreuken" and "Dales".

[2]   For example, when the End-User has inserted the name "Maneul" instead of "Manuel", the system will automatically recognize the typo and find both "Manuel" and "Maneul".

[3]   "Milestone 2" was defined in the June 2009 Council Conclusions.

[4]   COTS are ready-made and available for sale, lease, or license to the general public.

4. **SCHEDULE**

Before the entry-into-operation of SIS II in the first quarter of 2013, development, testing and migration phases must be duly finalised.

Four main blocks can be identified:

–   From now until the end of 2010, there will be a stage of finalisation of the specifications taking into account the updated requirements relating to system capacity.

–   The first quarter 2011 will be mostly dedicated to the development phase, where the main development contractor will implement the abovementioned changes.

–   The period between April 2011 and mid-2012 will be dedicated to testing, including the provisional system acceptance test (PSAT). "Milestone 2" test is to take place during that period. The rationale for merging the two tests, and for scheduling them towards the end of 2011, builds upon technical and contractual considerations. On one hand, the two tests are similar in terms of the technical content and conditions, and implementing them at two distinct stages of the project would have been inconsistent with the project's objective. On the other hand, this solution ensures cost efficiency and a more streamlined contractual implementation, by rationalising the overlaps between the two test campaigns. Last but not least, PSAT and "Milestone 2" test can only be scheduled after the completion of extensive testing of the central system with the national systems (during the first three quarters of 2011), including on performance and scalability aspects. This phase of the project development will imply readiness and availability of the Member States participating in those tests.

–   As of mid-2012, the activities related to system migration from SIS to SIS II will start with a global rehearsal followed by the live data migration at the end of 2012. At this stage, the readiness and availability of all Member States will also be crucial to ensure a successful outcome.

The system will thus be ready for entry into operation by the first quarter of 2013.

SCHEDULE	KEY STAGES
Requirements and Design of Interface Control Document (ICD) 3.0	
Q2 2010	ICD3.0 Requirements *(completed)*
Q2 2010 – Q4 2010	ICD3.0 Detailed Technical Specifications
Q3 2010	Quality Assurance Review
Q3 2010	Member States' Review
Development	
Q3 2010 – Q1 2011	Converter Adaptation (Factory Acceptance Testing)
	National Systems and Central System Simulator

	Development
Q3 2010 – Q1 2011	Central System Development
Q4 2010 – Q1 2011	National Systems Development
Testing	
Q2 2010 – Q3 2010	Informal Scalability Test on ICD 2.5.3
Q3 2010 – Q4 2011	Test Documentation, Test Detailed Descriptions
Q4 2010 – Q1 2011	Test Data, Tools Preparation
Q4 2010 – Q1 2011	Central System Informal Testing with Member States
Q2 2011 – Q3 2011	Central System Tests
Q2 2011 – Q3 2011	National Systems Tests
Q2 2011 – Q3 2011	National System Compliance Test and Qualification Tests for Member States being part of PSAT / Milestone 2
Q3 2011 – Q2 2012	Compliance Test Regression and Qualification Tests
Q3 2011 – Q4 2011	Central System Qualification Tests with Member States
Q4 2011 – Q2 2012	Provisional System Acceptance Test (including Milestone 2 Test)
Q2 2012 – Q3 2012	Comprehensive Test / SIRENE Test / LNI & BLNI Test
Migration	
Q2 2011 – Q3 2011	Converter Qualification Tests with C.SIS
Q3 2011	Converter System Solution Test
Q3 2011 – Q4 2011	Central Migration Rehearsal
Q4 2011 – Q1 2012	Limited Migration Rehearsal
Q3 2012 – Q4 2012	Global Migration Rehearsal
Q4 2012 – Q1 2013	Live Data Migration
Go - Live	
Q1 2013	Go-live of SIS II

5. BUDGET FOR THE COMPLETION OF THE DEVELOPMENT OF SIS II

By August 2010, out of total commitments of €95.5 million, the Commission had paid €62.77 million, of which €32.03 million for SIS II development at central level, €17.47 million for the SIS II network, €7.22 million for support and quality assurance and €4.69 million for the preparation of operational management in Strasbourg. In addition, €1.36 million were spent on other expenses. The table below presents a full account of all commitments and payments for the SIS II project to date.

	From 2002 to August 2010	
	Commitments (€)	Payments (€)
Development	43.175.733	32.031.248
Support & Quality Assurance	9.608.492	7.224.576
Network	32.375.954	17.467.443
Operational management preparation	7.377.015	4.687.498
Security	869.275	217.712
Studies / Consultancy	940.481	921.611
Information Campaign	33.373	33.373
Experts Mission Expenses	1.053.380	176.783
Others	14.874	14.874
TOTAL:	95.448.578	62.775.117

In view of the JHA Council of 4-5 June 2009, the estimated budget for completing the SIS II was €27.91 million, over a period of 22 months. Out of this amount, €21.74 million were estimated for development costs (including testing and migration), and €0.23 million were earmarked for hardware upgrades. The remainder related to quality assurance, operational management preparation, security and experts' expenses. However, this amount did not take into account any of the new requirements, notably the substantial increase of the number of alerts the system should handle.

Since then, and as described in section 3 of the present report, the strategy, assumptions and requirements for SIS II continued to evolve and were definitively identified together with Member States' experts. The budget required for the entry into operation of the SIS II must be seen in this context. Concretely, and further to the expenditure already incurred, the extensive negotiations on the final operational requirements for the system that took place in August – September 2010 led to the presentation of a budget of €34.95 million, over a period of 30 months. Out of this amount, €22.02 million is allocated to development (including testing and migration) and €12.93 for hardware upgrades. Hence, albeit the extended schedule, development cost remains comparable to the estimate of €21.74 million presented in June 2009. The additional budget incurred (€12.98 million) derives almost entirely from the costs related to the hardware increase of the system capacity. These costs are within the budgetary

envelope for large-scale IT systems as approved for the current financial perspectives (2007-2013)[1].

With respect to the need to safeguard investments in SIS II at national level, the implementation of the new ICD 3.0 is not expected to induce any major additional investment. Moreover, the Commission will endeavour to be fully flexible in adapting the national annual programmes of the European Borders' Fund to accommodate the extended SIS II-related resource implications for Member States, allowing them to benefit from EU co-financing up to 75%.

6.   CONTRACTUAL CONDITIONS AND GUARANTEES

In the course of the latest negotiations, the Commission ensured that none of the contractual conditions and safeguards of the original contract would be changed, in particular those concerning the provisions on penalties. In addition, the Commission also secured the introduction in the contract of the "resolutive" clause specified in the June 2009 Council Conclusions and related to the performance of the "Milestone 2" test. This will allow the Commission to decide on the immediate termination of the contract, should "Milestone 2" test be considered as failed.

7.   CONCLUSION

The SIS II project has had a difficult evolution. The challenge for all stakeholders has been to adapt and respond to the significant increase in the number of users (following EU enlargement), the intensity of use of the existing SIS by Member States authorities, as well as the need to reach a common understanding on the definitive operational requirements of the system.

Thanks to a collaborative approach with Member States and transparent information exchange towards the European Parliament, and on the basis of commonly agreed definitive requirements, the Commission is now in a position to confirm the global schedule and present the budgetary plan for the entire project. Accordingly, SIS II will enter into operation in early 2013. The further development of the system and the increase of its capacity require an additional allocation of €12.98 million, compared to the estimate presented to the Council and Parliament in June 2009 and April 2010. This amount is within the overall budgetary envelope for SIS II agreed by Council and the European Parliament for the period 2007-2013.

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[1]   Statement of Estimates of the Commission for 2011, Part II SEC(2010)473, May 2010