Department of Higher Education and Training

Post-School Education and Training

Central Application Service

Enterprise Architecture

Chapter 10 – Implementation Plan

February 2016

Contents

1   Terms of Reference

This implementation plan for the Central Applications Service (CAS) has been developed as part of the Enterprise Architecture project undertaken by Learning Strategies on behalf of the Department of Higher Education and Training (DHET).

The chapter provides an overview of the proposed implementation plan with various possible accelerators and potential constraints on the implementation process.

This implementation plan presents deliverable 4.11 of the Terms of Reference and completes step 6 of the project plan and forms chapter 10 of the consolidated CAS Enterprise Architecture.

2   Enterprise Architecture for the CAS

This project has developed a comprehensive enterprise architecture for the CAS for the PSET sector. The enterprise architecture has set out an operating model and service model and defined the various operating procedures and functional components required for the establishment of the CAS.

During the course of the enterprise architecture project, the CAS project team have engaged extensively with various key stakeholders and institutions which could impact on the implementation of the CAS, particularly in respect of the level of cooperation and contribution to the establishment of the CAS from the KZN Central Applications Office and NSFAS.   These engagements have been focused on assessing the potential for collaboration aimed at shortening the implementation cycle and minimising and mitigating the implementation and development risk.

At the point of developing the implementation plan, no formal commitments for such collaboration have been obtained.

3   Implementation Options

The development of the enterprise architecture and the engagement with key related entities such as KZN CAO and NSFAS, have presented two broad implementation options, namely:

- **Greenfields Implementation and Establishment** – this option will imply that the CAS is established from scratch including the establishment and development of entirely new information technology platforms and systems for the implementation of the CAS.   Once established as a public entity the CAS would be created through the employment of new staff and the implementation of new systems, procedures and support functions.

- **Brownfields Implementation** – this options believes that significant value and risk limitation may be possible from the leveraging of existing knowledge, systems and information technology platforms which already exist within two key entities servicing the higher education sector, namely the KZN CAO and NSFAS. The exact nature of the inputs provided from these entities has yet to be determined and no formal agreement has been reached regarding any form of collaboration or future cooperation. The potential value from leveraging the existing knowledge and platforms would, however, potentially significantly reduce the implementation

timeframe and implantation risk while at the same time potentially reducing the cost of implementation.

In the absence of any formal agreement towards collaboration or leverage of existing technology and platforms, it is necessary to formulate a baseline implementation plan which is effectively based on the Greenfields option. It is then possible to identify the potential accelerators which could shorten the implementation timeframe and potentially limit the implementation costs which could progressively move the implementation approach from Greenfields towards a level of Brownfields implementation.

4   Key Planning Assumptions

The key planning assumptions for this implementation plan are as follows:

4.1   Assumption 1: Based on Enterprise Architecture

The implementation plan is based on the enterprise architecture as developed through the enterprise architecture project and as presented to the Advisory Committee through the various stages of the project.

4.2   Assumption 2: Phased Implementation

The implementation plan is also based on the fundamental assumption of the phased implementation of the CAS through manageable cycles and progressively into the various levels of the PSET sector. In particular, the implementation plan assumes that the launch of the CAS will be for a limited scope of higher education institutions (universities) with the target receipt of applications of approximately 100 000 applications. It is expected that this initial phase would then be followed a year later by subsequent phases where the balance of universities will be added together with selected TVET colleges which would enable the movement of the CAS service into the next level of the PSET sector. The progressive roll out of the CAS bringing on an expected further 100 000 to 200 000 applications per year enables the CAS to progressively expand to cover the entire college sector and eventually service the skills sector thereby covering the entire PSET sector.

4.3   Assumption 3: Location of the CAS

While the enterprise architecture project has been open to various location alternatives for the establishment of the CAS, information received from DHET has directed that the planning should assume the establishment of the CAS in the Gauteng Province, potentially in the Tshwane area. This location is opportune in terms of major academic institutions, service partners such as CHE, SAQA, SETAs, QCTO are established in this academic capital of SA. This limits the Brownfields opportunities and potentially limits the opportunity for leverage of the skills and capabilities of the KZN CAO. The implementation plan has been based on this directive. The project team, however, believes that this directive should be reconsidered during the course of the design phase with the view to potentially leveraging the opportunities that exist through establishment of the CAS in other locations where there may be access to a capable and competent workforce at lower cost and without the implications of population density (traffic and other implications).

4.4   Assumption 4: Establishment of Public Entity

The enterprise architecture project has clarified that the CAS will be established as a public entity which by definition requires the legislative process to be completed for the establishment of the entity. The legislative process includes the finalisation of a policy framework, the conducting of Socio-Economic Impact Assessment (SEIA) and the preparation of legislation which will follow its course through the legislative process. This process is by definition a relatively time consuming process and has various risks of delays

at various stages. The implementation plan has been formulated based on the assumption that the legislative process can be completed well within a two year timeframe which would enable the establishment of the public entity in advance of the proposed launch date.

It is furthermore assumed that the Legislative Establishment process does not prevent the securing and release of money necessary to fund the development and operating costs incurred prior to establishment of the public entity.

4.5 Assumption 5: Central Programme Database

While not part of the scope of the CAS Enterprise Architecture project, the project team has identified the value of a central, national programme database and has written a position paper to this effect. The implementation plan presented here makes an implicit assumption that a CAS Central Academic Programme Database is developed and is made available to Institutions 3 months before the launch of the service. It does not make a specific assumption that this should be a central National Academic Programme database, although the project does recommend that such a National Academic Programme Database is considered.

4.6 Assumption 6: Points of Presence

In order to provide access points for applicants to engage with the CAS and also to provide locations at which connectivity to the CAS solution is offered to applicants who may not have access to the internet, the CAS implementation plan provides for the establishment of points of presence. The plan does provide for "CAS-owned" as well as service provider points of presence. The project team has identified a number of possible partners through whom points of presence can be made available, including:

- Schools themselves, through close cooperation with the Department of Basic Education

- DHET regional offices – by providing kiosks and contact desks in these existing locations

- Unisa Service Centres – Unisa has 39 service centres throughout the country that could also provide kiosks and contact desks

- Universities and Colleges – through the admissions offices of these Institutions

- Department of Labour regional offices - by providing kiosks and contact desks in these existing locations

4.7 Assumption 7: Target Launch Date for the CAS

The performance plan for DHET relating to the establishment of the CAS has targeted the launch of the CAS on 1 April 2018. Launch in itself can be interpreted in various ways and is for the purpose of this implementation plan assumed to as a minimum involve at least the following:

1. The formal establishment of the CAS public entity through the legislative process.

2. The establishment of the Board of the CAS.

3. The employment of the initial resources of the CAS.

4. Opening for business in order to begin the process of direct engagement with institutions in preparation for receiving applications in the following year's application cycle, meaning that applications will be received in 2019 for the 2020 academic year.

In terms of launch milestones, Steps 1 and 2 can be classified as the CAS Entity Launch. Steps 3 and 4 can be classified the CAS Operational Launch. A further launch milestone is then the CAS Service Launch, at which point the CAS opens the first application cycle.

5 Implementation Plan Components

The implementation plan has been broken into seven components asset out below:

#	Component	Description
1	Enterprise architecture	This component of the plan is the current phase of the project and is completed with the final approval of the results of the enterprise architecture project. This document is one of the final deliverables of this phase with the remaining deliverables being the consolidated enterprise architecture report, the international study tour and the development of the policy advisory document.
		Provision has been made for the enterprise architecture to be consulted past various stakeholders in the first half of 2016.
2	Stakeholder programme	Extending from the enterprise architecture process, the programme requires extensive stakeholder engagement first at representative level with the advisory committee and technical working groups and the steering committee for the project. More intensive stakeholder engagement will then be required with institutional stakeholders and service partners. This will begin a continuous process of engagement that will follow right through to the launch of the CAS and beyond.
3	Legislative establishment	The legislative establishment process covers the process aimed at the legal establishment of the CAS as a public entity. It covers the finalisation of the policy framework and the socio economic impact assessment leading to the preparation of the draft bill and the process of submission of the bill through parliament for the legal establishment of the entity.
4	CAS entity establishment	This is the process of establishing the public entity in practical terms including securing seed funding, securing agreements with various partners and collaboration entities and the operationalisation of the entity including its governance, staff recruitment, premises, equipment and actual launch of the entity.
5	CAS solution	The CAS solution is the portion of the project which develops the technology solution which will support the services provided by the CAS. This phase of the project follows the typical solution development life cycle including requirements definition, solution design, development and testing, followed by deployment of the solution in a production environment
6	Service launch	The launch of the service takes place at various points in time as the various phases are rolled out to defined target markets. Accordingly the launch phase has been specified to take place in April of each year from 2019 through to 2022. In each case, the steps taken will be repeated aimed at the new target market for the CAS.

#	Component	Description
7	Advocacy and marketing programme	This component of the project plan aims at establishing the marketing and advocacy processes required to continually engage with the various target markets as the CAS is implemented through the phases. As with the service launch, the advocacy and marketing process will be repeated on a rolling basis as the CAS is rolled out to the various subsequent phases.

A summary of the implementation plan is shown below and will be described in more detail in the following section.

Financial Year	2016/2017				2017/2018				2018/2019				2019/2020				2020/2021			
Activity Group	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Consult & Approve Enterprise Architecture	█	█																		
Stakeholder Programme	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Legislative Establishment	█	█	█	█	█	█	█													
CAS Entity Establishment		█	█	█	█	█	█	█	█	█	█									
Preparation Activities		█	█	█	█	█	█													
Entity Establishment								█	█	█										
Recruitment & Operationalisation										█	█									
CAS Solution Design & Development		█	█	█	█	█	█	█	█	█	█	█								
Requirements Definition		█	█																	
Solution Design				█	█															
Solution Development						█	█	█	█											
Solution Testion										█	█									
Deployment											█	█								
CAS Service Launch											█	█	█	█	█	█	█	█	█	█
Launch Preparation											█	█								
Programme DB Launch											█									
CAS Service Launch													█	█	█	█				
CAS Roll-out 1																	█	█	█	█
Advocacy & Marketing Programme		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

6 Detailed Implementation Plan

The detailed implantation plan for the baseline scenario is attached as **Appendix A.** Set out below is the description of the main implementation steps including the expected timeframe and responsibility:

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
1 - Enterprise Architecture					
1.1	Enterprise architecture deliverables	The completion of the final enterprise architecture deliverables is expected to take place by end of February 2016.	Learning Strategies		
1.2	Prepare policy advisory document	The policy advisory document will be formulated as input to the formation of the policy framework.	Learning Strategies	1 January 2016	Two months
1.3	Study tour	An international study tour to UCAS in England and the Central Applications Service in Ireland will take place in January 2016.	Learning Strategies and DHET One month	1 January 2016	One month
1.4	Consolidated enterprise architecture report	Pulls together all the deliverables to date on the enterprise architecture project	Learning Strategies	End of January 2016	One month
1.5	Enterprise architecture consultation	Extensive consultation on the final proposed enterprise architecture to take place with various stakeholders	DHET and Learning Strategies	March 2016	Four months
1.6	Ministerial approval	Sign-off of the enterprise architecture and proposed implementation approach by the Minister of Higher Education and Training	DHET	June 2016	One month
2 - Stakeholder Programmes					
2.1	Confirm stakeholder strategy	A stakeholder engagement strategy had been developed as part of the enterprise architecture and should be confirmed with the Advisory Committee and technical working groups	DHET	January 2016	Three months

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
2.2	Structured stakeholder engagements	These engagements require initially engagement with the representatives of key stakeholders through the advisory and technical working groups and the Steering Committee. This process will take place in the second quarter of 2016. It will then be followed by direct engagement with individual institutions, service partners and other stakeholders which will commence in mid-year 2016 and continue throughout the rest of the implementation of the CAS.	DHET and then CAS	April 2016	Ongoing
3 – Legislative Establishment					
3.1	Prepare draft policy framework	The policy advisory document will inform the formulation of a policy framework which will need to be developed an consulted with various parties	DHET	February 2016	Three months
3.2	Conduct social economic impact assessment	This process is required for all proposed new legislation establishment of new public entities. The process is prescribed by the government legislative requirements and will take a minimum of three months potentially extending to six months. The process should commence in April 2016 but may be delayed based on ministerial approval.	DHET	1 April 2016	Three to six months
3.3	Final policy framework	The final policy framework should then be formulated based on the outcome of the social impact assessment and be consulted with key stakeholders. The process is expected to take three months.	DHET	After completion of SEIA	Three months
3.4	Prepare draft bill	The draft bill will be prepared based on the policy framework	DHET	After final policy framework is complete	Three months
3.5	Bill tabled in parliament	Bill for the establishment of the CAS to follow the normal legislative process through parliament	DHET	After finalisation of the draft bill	Three to six months
3.6	Possible review of bill	Provision should be made for a review of the draft bill which may require the bill to be returned to the drafters of the legislation for amendments. Three months has been provided for this.	DHET	If returned from parliament	Three months
3.7	Public entity legally established	This final phase is effectively the passing of the legislation for the establishment of the public entity	Parliament	On approval of the bill	

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
4 – CAS Entity Establishment					
4.1	Secure seed funding	This step requires a number of sub-steps including approaching Treasury for support, preparing the funding request / business plan and finalising the funding before the establishment of the entity. This phase is expected to require approximately five months and could run in parallel with the final consultation on the enterprise architecture with funding for the establishment being secured before the end of June 2016.	DHET	1 February 2016	Five months
4.2	Service Partner collaboration	This phase requires interaction directly with two key potential service partners namely the KZN CAO and NSFAS. Interim agreements would need to be formulated potentially in Q3 2016 with final agreements being formulated at least six months before the actual establishment of the public entity. In addition, agreements would need to be concluded with other potential service partners	DHET		Six months process
4.3	Establish operational entity	Once the public entity is established by way of legislation, the next step is the actual establishment of the entity commencing with the establishment of an interim board and the necessary governance mechanisms. This would be followed by formalisation of the policies and procedures, including the operationalising of accounting and HR systems and performance agreements. The basis for monitoring evaluation should also be implemented in this phase.	DHET	After the passing of legislation	One year
4.4	Recruit staff	This phase is likely to take place in two steps with initial staff being recruited to establish the entity and then the process of engaging the full staff compliment to manage the first phase of the entity. The exact timing of the recruitment of the first staff will depend on the legal approval to do so, possibly only after the passing of the legislation. If staff are required before this time, they would have to be engaged in the project under DHET prior to establishment.	DHET and then CAS		
4.5	Secure operational premises	This includes identifying the appropriate location and signing the necessary lease agreements together with setting the facility up for operations including finishings and equipment.	CAS	After the establishment of the Board	Six months

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
4.6	Secure equipment and points of presence	While CAS will be largely a centralised facility, there is an extensive requirement for extending the presence of the CAS through various points of presence either owned by CAS or negotiated with identified service partners. These facilities would need to be properly equipped and operationalised through a six to nine month process, commencing after the CAS entity has been formally established.			
4.7	Launch preparation	This step involves all the necessary activities in preparation of launch of the CAS service to applicants. Key activities will include staff training, testing of points of presence and training of service partner staff as well as training of staff at individual institutions. Again, this is initially a nine month process, potentially extended over a further six months during the implementation phase. This phase needs to start at least six months ahead of the intended first launch date	CAS (Nine months plus six months)	Six months before launch	
5 – CAS Solution					
5.1	Requirements Definition phase procurement	This phase involves the procurement of service providers to perform the requirements definition. The procurement will require an open tender process. The procurement process should commence as soon as possible so that this does not delay the commencement of the design phase. The Requirements Definition phase should commence no later than 1 July 2016 and contracts must therefore be concluded before then. The Requirements Definition should also include a review of the available CAS platform options to enable a firm recommendation regarding the CAS platform.	DHET	1 February 2016	Three to Four months (hopefully Three)
5.2	Requirements definition	This can be an intensive phase where the output of the enterprise architecture is expanded into detailed requirements definition for the systems development. The project could be undertaken in a three month timeframe and commence immediately on the completion of the procurement process.	Service provider	On appointment	Three months
5.3	CAS Platform and Programme Database decision	A firm decision on the future CAS platform must be made, either to confirm the usage of the existing NSFAS (or even KZN CAO) platform as a basis for solution design and development, or to	DHET	Together with Requirements Definition	

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
		develop a separate CAS platform. Also, a firm decision must be made whether to implement a National Academic Programme Data Store or to implement a CAS Academic Programme Database. These are critical decisions and influences the procurement of the solution design and development phase			
5.4	Solution Design and Development phase procurement	This phase involves the procurement of service providers to design and develop the CAS solution. The procurement will require an open tender process. It is expected that the procurement process will require an approved Business Plan (activity 4.1)	DHET	1 February 2016	Three to Four months (hopefully Three)
5.5	Solution design	This phase takes the requirements definition into a comprehensive solution design and should be provided by the same service provider procured for the development process. The solution design is likely to require a six month timeframe which could be shortened with more intensive effort (but with consequently less opportunities for consultation)	Service provider	On completion of requirements definition	Six months or less
5.4	Additional Solution Development phase procurement	This activity provides for additional procurement required to support the solution development phase. The additional procurement is expected to include specific solution development activities, such as performance testing as well as any hardware or other infrastructure required for the solution development	DHET	Half way through the solution design phase	Three months
5.5	Solution development	The solution development is one of the largest portions of the CAS solution timeframe requiring at least one year (potentially shorter with accelerators). The solution development will be undertaken by a service provider procured through step 5.4	Service provider	On appointment	12 months
5.6	Solution testing	This phase requires the extensive testing including user testing, functional testing and stress testing of the total solution. At least six months should be provided for this testing and it should commence at least six months before the launch of the application service.	Service provider	Six months Six months before launch	
6 – Service Launch					
6.1	Readiness	A readiness assessment for the launch would need to be	CAS	Three months before	Three month

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
	assessment	conducted before each launch phase and should involve all the necessary testing of systems, access and procedures. This readiness assessment will include service providers and educational institutions involved in a particular service launch.		launch	
6.2	National Academic Programme database launch / Central Academic Programme Database launch	The development of the National Academic Programme database has been proposed as a project to run in parallel with the establishment of the CAS. Alternatively, and as a minimum, a central CAS Academic Programme database would have to be developed The database would need to be launched in advance of the launch of the first phase of the CAS, to allow programmes to be loaded and checked before the CAS launch.			
6.3 to 6.6	CAS solution launch	The launch would take place at the commencement of each phase.	CAS	On launch date	Three months
7 – Advocacy and Marketing Programme					
7.1	Confirm advocacy and communication plan	The enterprise architecture project has developed an advocacy and communication plan which will need to be extended through the detailed design phase and ready for implementation in advance of the launch of the CAS.	DHET	1 February 2016	Six months
7.2	Design advocacy campaign	The advocacy campaign would need to be designed based on the outcome of the enterprise architecture project.	DHET	1 April 2016	Six months
7.3	Launch advocacy campaign	The advocacy campaign is aimed at bringing all stakeholders on board to the CAS and will be an ongoing programme throughout the multiple launch phases. The advocacy campaign should launch as soon as possible after the completion and sign-off of the enterprise architecture and the design of the advocacy campaign.	DHET		Ongoing
7.4	Design marketing campaign.	The final marketing campaign should be designed in the year leading up to the launch of the CAS and should take into account all the current issues, technologies and social media trends available at that stage.	DHET and then CAS	One year before CAS launch	One year
7.5	Secure media	This project step requires the media to launch the CAS to be secured in advance in preparation of the above the line	CAS	Three months before phase launch	Three months

Step #	Project Phase	Description	Responsibility	Commencement Date	Expected Timeframe
		advertising campaign in advance of each launch phase.			
7.6	Launch marketing campaign	This is the campaign for the launch of the CAS which should commence three months before the actual launch and continue through the next nine months once the CAS is operational.	CAS	Three months before launch	One year
7.7	Roll out marketing campaign	This is the repeat of the launch campaign adjusted for the revised target market in each subsequent roll out phase.	CAS	Three months before launch date of each phase	One year

7   Detailed Project Plans

The overview project plan for component of the project is set out as **Appendix A.** This is supported by a more detailed project plan for the design phase attached as **Appendix B** and the development project attached as **Appendix C.** The various components of each of each of these detailed plans are self-explanatory and would in any event need to be revised by the service provider responsible for the design and development phases of this project. These detailed plans are provided for indicative purposes only and have been used in order to determine the resource requirements for the estimated cost of these phases.

The project plans use numbers to highlight cells in different colours:

1.   Dark Green – Planned activity

2.   Light Green – Activity could start earlier than planned

3.   Light Green – Activity could continue longer than planned

4.   Blue – Project activity on an ongoing basis

5.   Red (aggressive plan only) – Baseline activity has been shortened and/or brought forwards

8   Implementation Plan Accelerators

This section presents a number of accelerators which could materially impact on the plan and shorten the planning horizon, these include:

- **NSFAS Platform Collaboration** - Discussions have already taken place with NSFAS regarding the potential for collaboration between CAS and NSFAS to utilise a standard platform based on the existing NSFAS platform. The benefits of this collaboration would be that the decisions in terms of the operational platform and solution components have already been thoroughly considered by NSFAS and are largely already in place. Obviously, the solution for the CAS system still needs to be designed and developed but the critical components and the tool with which to develop the solution would already be in place and operational from the NSFAS platform. It is believed that this could shorten the design and development timeframes and could even allow certain components of the design to commence in the very short term. For example, the design of an appropriate application form could be done at the same time as the revision of the NSFAS application process so as to create a single application capture process for both academic studies and funding.

- **Leverage KZN CAO Capabilities** - The KZN CAO is already operational and servicing the universities and a number of colleges in KZN. The full implementation of the CAS if done on a Greenfields basis would effectively mean that the compulsory participation in the National CAS would require the closure of the KZN CAO. This would imply that costs would be incurred in the closure process and existing employees would need to be terminated. The existing knowledge, understanding of the application process and service culture of the existing CAO would largely be lost in the process.

It is believed that there is potential significant opportunity for leveraging the existing knowledge and capabilities of the CAO even if this is to be done on a new solution and potentially on the NSFAS platform.

The directive to locate the CAS in Gauteng/Tshwane does appear to be at odds with the opportunity to leverage the existing capability and capacity of the KZN CAO. The project team has indicated that the location of the CAS office could be anywhere nationally and does not necessarily need to be located close to the DHET offices or other higher education entities and institutions. The CAS office is effectively a factory which would interact remotely with applicants and institutions. The location of this factory in a low cost easily accessible environment appears to make sense.

Collaboration with the KZN CAO and potentially brining in the resources, capacity and capability of the CAO to effectively establish the CAS at the outset would both reduce or remove the cost of closure of the CAO and provide a significant opportunity for shortening the establishment timeframe for CAS.

There is a further opportunity to leverage the existing KZN CAO systems and processes on an interim basis for the first region to be service. This would allow accelerating the CAS Service Launch to April 2018 without having the full CAS Solution in place. It must be noted however that a decision to follow this route must be taken carefully as it will introduce further risks and complexities.

- **Procurement Process** – the current procurement processes within DHET are understood to potentially take between three and six months to complete. An accelerator in this project would be to shorten the procurement process while still ensuring that all requirements are met. This is possible with careful planning and ensuring that the procurement process commences in advance of the completion of the previous phase so that there are no gaps or standing time in the project.

  As much as procurement can be an accelerator, it could also be an impediment where procurement processes are allowed to extend beyond a three month horizon.

With these and other Accelerators, the CAS Service Launch date could be shortened by a year (from 1 April 2019 to 1 April 2018). This is presented in an Aggressive Implementation Plan, included in **Appendix D**. The Aggressive Implementation Plan follows the same structure as the Baseline Implementation Plan, but with activities shortened in order to meet the 1 April 2018 CAS Service Launch date. Shortened activities are colour-coded in Red in this planning scenario, and it is clear that apart for the Legislative Process (which was not shortened), almost all other activities have been shortened or brought forward. This highly aggressive plan will require significant and strong project management, as the plan allows for no slippage. Learning Strategies has developed to illustrate that such a plan is possible, but execution of this plan would need to start from January 2016, and would be highly intensive throughout, as the aggressive plan has no tolerance for slippage in any of the activities (i.e. the entire plan is on the critical path). Learning Strategies is concerned however that DHET will not be in a position to mobilise fast enough to initiate and execute the Aggressive Plan, and therefore does not recommend this plan.

9 Transitional Arrangements

A further scenario has been developed where the Baseline Plan has been combined with transitional arrangements to achieve both the CAS Entity Launch and the CAS Operational by 1 April 2018, enabling the CAS Entity to process applications from 1 April 2018 in preparation for the 2019 cohort intake.

It is important to remember that the Baseline Implementation plan allows CAS Entity and Operational Launch by 1 April 2018 but only allows CAS Service Launch by 1 April 2019.

The Transitional Arrangement involves reaching an agreement with the four KZN Universities that currently process applications through the KZN CAO that involves incorporating the KZN application process into the PSET CAS for an interim, transitional period, leveraging the existing KZN CAO processes, platform and staffing during the transitional period and until the new CAS Solution is ready to be launched, after which the KZN application process would be transitioned onto the new CAS Solution. This approach is illustrated in **Appendix E** where an additional set of activities have been scheduled to enable the preparation and incorporation to occur to enable transitional applications to commence on 1 April 2018. It is important to note that these transitional arrangements have not yet been agreed with the parties involved.

It is important to note that the envisaged transitional arrangement could also be used to, for instance, enable the existing KZN CAO to perform the processing (or part thereof) of offline applications, e.g. to scan and capture these applications on the CAS systems.

10 Implementation Plan Impediments

Just as there are accelerators to the implementation process, there are also potentially impediments which could extend the planning horizon. These include:

- **Delayed Decision Making -** Any delays in decision making including but not limited to approval of the enterprise architecture and other key decisions relating to collaboration with key entities could potentially impact on the timeframe and delay the implementation of the project. The project team together with DHET officials will need to ensure that decision processes are shortened as far as possible.

- **Legislation Process –** The passing of legislation is a time consuming process which is dependent on established steps and procedures leading to the passing of the legislation through parliament. There are a number of steps where delays could occur including returning the draft bill for amendments and later resubmission. Care should be taken that the legislation process is done as efficiently and effectively as possible hopefully to ensure a "straight through" process.

- **Service Partner Collaboration** – Service partners play a significant role in the establishment and operation of the CAS. Any delays in their engagement and/or in their active collaboration may impact on the ability to launch the CAS service. Clear agreements together with pro-active stakeholder engagement will be required to ensure no critical delays are encountered.

11 Sequence of Launch Phases

A preliminary Sequence of Launch Phases has been developed based on grouping Institutions based on their system platforms and geographical location to arrive at a sequence that achieves approximately 100,000 applicants in each of the first two phases and 200,000 applicants in the two subsequent phases. Note that the number of incremental applicants is based on factoring the number of current applications by 50% to account for unknown current multiple applications. The grouping is defined in the table below.

#	Institutions	Rationale
1	Durban University of Technology Mangosuthu University of Technology University of KwaZulu-Natal University of Zululand	Existing KZN CAO universities All on ITS versions All based in KZN Approximately 100,000 applicants
2	Central University of Technology Sol Plaatje University Tshwane University of Technology University of Johannesburg University of Limpopo University of Mpumelanga University of Venda Vaal University of Technology	All on ITS versions Major universities based in Gauteng, and rest in provinces surrounding Guateng Approximately 100,000 applicants
3	Cape Peninsula University of Technology Nelson Mandela Metropolitan University University of Fort Hare Walter Sisulu University	All on ITS versions All in Eastern Cape and Western Cape Approximately 50,000 applicants
	University of Cape Town University of Pretoria University of the Free State University of the Witwatersrand	All on Peoplesoft Approximately 50,000 applicants
	North West University Stellenbosch University Rhodes University University of the Western Cape	On other systems Approximately 30,000 applicants
	TVET Colleges	Approximately 80,000 applicants
4	Unisa	On Tribal SITS Approximately 100,000 applicants
	Community Colleges	Direct capture Approximately 100,000 applicants
5	SETA Learnerships	Approximately 80,000 applicants

Note that it possible to swap groups 1 and 2 and groups 3, 4 and 5. It is recommended that group 3 does not precede 1 nor 2 as this would introduce additional complexities.

12 Summary of Implementation Plan

The Baseline Plan was developed to provide for the establishment of the PSET CAS entity and the development of the systems, processes and human resource to enable the successful launch of a central application service. It has provided for known planning parameters, and while it is based on a Greenfields option, it can be adapted to incorporate Brownfields components, as long as these components are formalised through service partner agreements in time to be incorporated without impacting the critical path.

The Baseline Plan combines five key streams to build towards the Service Launch, namely:

1. A Stakeholder Programme to obtain and maintain stakeholder support and collaboration;

2. The Legislative Establishment through which the public entity is formally established through laws that will govern the CAS entity but also will ensure the regulatory framework through which the PSET sector will embrace this endeavour;

3. The CAS Entity Establishment through which the public entity will be set up, governance mechanisms implemented, funding provided, staffed with capable human resources and located in suitable premises;

4. The CAS Solution design and development through which the core systems to support the application service will be designed, developed, tested and ultimately deployed; and

5. An Advocacy and Marketing Programme to create awareness for and appreciation of the launch of the CAS service. This programme will ultimately become the Business As Usual marketing programme of the CAS.

A derivative of the Baseline Plan has been developed that incorporates transitional arrangements that allow the CAS Service Launch to be brought forward.

13 Conclusion

This report together with the supporting implementation schedules present the implementation plan for the establishment of the CAS. The plan has been developed under two scenarios for a baseline and aggressive implementation approach.

The Baseline Plan shows that the Entity and Operational Launch can be achieved by 1 April 2018, with a Service Launch by 1 April 2019.

The Aggressive Plan uses accelerators to shorten activities and shows that the Entity. Operational and Service Launch can be achieved by 1 April 2018, but with no room for delay and with activities having to start in January 2016.

The Baseline Plan with Transitional Arrangements enables Entity. Operational and Service Launch by 1 April 2018, but with the launch of the new CAS Solution only from 1 April 2019.

Post-School Education and Training
Central Application Service
Enterprise Architecture
Chapter 10 - Implementation Plan
February 2016

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APPENDICES

A – Baseline Implementation Plan

The Baseline Implementation Plan is contained in a separate Excel spreadsheet document and is appended at the end of this chapter.

B – Detailed Solution Design Phase Plan

The Detailed Solution Design Phase Plan is contained in a separate Excel spreadsheet document and is appended at the end of this chapter.

C – Detailed Solution Development Phase Plan

The Detailed Solution Development Phase Plan is contained in a separate Excel spreadsheet document and is appended at the end of this chapter.

D – Aggressive Implementation Plan

The Aggressive Implementation Plan is contained in a separate Excel spreadsheet document and is appended at the end of this chapter.

E – Baseline Implementation Plan with Transitional Arrangements

The Baseline Implementation Plan with Transitional Arrangements is contained in a separate Excel spreadsheet document and is appended at the end of this chapter.

Financial Year	2015/2016		2016/2017				2017/2018				2018/2019				2019/2020				2020/2021				2021/2022				2022/2023		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Calendar Year	2015		2016				2017				2018				2019				2020				2020				2020		
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Phases	Enterprise Architecture Phase			Design Phase			Build & Establish Phase												Launch & Roll-out Phase								Business As Usual Phase		

1 Enterprise Architecture
- 1.1 Enterprise Architecture Deliverables
- 1.2 Prepare Policy Advisory Document
- 1.3 Study Tour
- 1.3 Consolidated Enterprise Architecture
- 1.4 Enterprise Architecture Consultation
- 1.5 Ministerial Approval

2 Stakeholder Programme
- 2.1 Confirm Stakeholder Strategy
- 2.2 Structured Stakeholder Engagements
  - Advisory & Technical Groups
  - Steering Committee
  - Institutional Stakeholders
  - Service Partner Stakeholders
  - Applicant / Teacher / Parent Groups

3 Legislative Establishment
- 3.1 Prepare Draft Policy Framework
- 3.2 Conduct Social Economic Impact Assessment
- 3.3 Final Policy Framework
- 3.4 Prepare Draft Bill
- 3.3 Update Social Economic Impact Assessment
- 3.5 Bill Tabled in Parliament
- 3.6 Possible Review of Bill
- 3.7 Public Entity Legally Established

4 CAS Entity Establishment
- 4.1 Secure Seed Funding
  - Obtain Treasury Support
  - Prepare Funding Request/Business Plan
  - Obtain Pre-Establishment Funding
- 4.2 Service Partner Collaboration
  - Interim Agreement with KZN CAO
  - Interim Agreement with NSFAS
  - Final Agreement with KZN CAO
  - Final Agreement with NSFAS
  - Service Partner Agreements
- 4.3 Establish Operational Entity
  - Establish Board
  - Establish Governance mechanisms
  - Finalise Policies & Procedures
  - Operationalise Accounting & HR systems
  - Finalise Performance Agreements
  - Monitoring & Evaluation
- 4.4 Recruit Staff
  - Staff to Build & Establish
  - Staff to Manage
  - Staff to Launch
- 4.5 Secure Operational Premises
  - Secure Office Location(s)
  - Secure Furnishing & Equipment
- 4.6 Secure & Equip Points of Presence
  - CAS-owned
  - Service Partners
- 4.7 Launch Preparation
  - Staff Training
  - Point of Presence Training
  - Institution Training

5 CAS Solution
- 5.1 Requirements Definition Phase Procurement
- 5.2 Requirements Definition
- 5.3 CAS Platform Decision
- 5.4 Solution Design & Development Phase Procurement
  - Secure Project Environment
  - Secure Project Equipment
- 5.5 Solution Design
- 5.6 Additional Solution Development Procurement
- 5.7 Solution Development
- 5.8 Solution Testing

6 Service Launch
- 6.1 Readiness Assessment
- 6.2 National/Central Programme DB Launch
- 6.3 CAS Solution Launch
- 6.4 CAS Roll-out 1
- 6.5 CAS Roll-out 2
- 6.6 CAS Roll-out 3

7 Advocacy, & Marketing Programme
- 7.1 Confirm Advocacy & Communication Plan
- 7.2 Design Advocacy Campaign
- 7.3 Launch Advocacy Campaign
- 7.4 Design Marketing Campaign
- 7.5 Secure Media
- 7.6 Launch Marketing Campaign
- 7.7 Roll-out Marketing Campaign

Notes
- Scheduled Activity
- Activity can start before or continue after Schedule
- Ongoing Activity

Financial Year	2015/2016			2016/2017											
Financial Quarter	Q4			Q1			Q2			Q3			Q4		
Calendar Year	2016														
Calendar Quarter	Q1			Q2			Q3			Q4			Q1		
Month	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Detailed Design Phases		Procurement					Reqs Definition			Procurement				Solution	
Requirements Definition Phase Procurement															
Develop & Issue RFP			X												
Receive RFP Responses				X											
Evaluate RFP Responses & Select					X	X									
Contract Selected Bidder(s)						X									
Requirements Definition Phase															
Mobilisation															
Project Team Induction							X								
Establish Project Office							X								
Establish Project Plan							X								
CAS															
Finalise CAS Processes							X								
Develop BRD							X	X	X						
Institutions															
Define & Agree Application Fields							X	X							
Define & Agree Statuses							X	X							
Define & Agree Cycles							X	X							
Define & Agree Data Models							X	X							
Define & Agree Integration Points							X	X							
Define Institution F/E Requirements									(x)						
Service Partners															
NSFAS Requirements							X	X							
Home Affairs ID Integration							X	X							
DBE Results Upload							X	X							
IEB Results Upload							X	X							
CIE Results Upload							X	X							
NLRD Integration							X	X							
CDS / NCAP Integration							X	X							
EasyPay / Pay@ Integration							X	X							
Solution Platform Options															
Review of KZN CAO platform						(x)	X								
Review of NSFAS platform						(x)									
Solution Platform Recommendation							X								
Requirements Sign-off															
CAS Process "Sign-Off"							X								
Requirements Definition "Sign Off"									X						
Platform Decisions (NSFAS / CAO)								X							
Academic Programme Database decision								X							
Solution Design & Build Phase Procurement															
Develop & Issue RFP									X						
Receive RFP Responses										X					
Evaluate RFP Responses & Select											X	X			
Contract Selected Bidder(s)												(x)	X		
Solution Design Phase															
Mobilisation															
Project Team Induction													X		
Establish Project Office													X		
Establish Project Plan													X		
Functional Design															
Functional Specification													X	X	(x)
Database design														X	X
Integration Design															
Integration Point Specifications														X	X
Component Specifications														X	X
MI/BI Specification															X
Master Data Definitions / Standards															X
Accounting / SCM Specification														X	X
HR / Payroll Specification														X	X
Screen / Workflow Design															
Screen Mockups & Flows															
Workflow Design															
Stage Transitions															
Integration Triggers															
Interface Design															
Interface Specifications															
Test Design															
Test Cycle Design															
Test Conditions															
Infrastructure Design															
Infrastructure Specifications															
Dev / Test Environment															
Production Environment															
CAS Office															
Deployment Design															
Deployment Plan															
Readiness Conditions															
External engagement															
Institutions													X	X	X
Service Partners													X	X	X
Change Requests to Service Partners															
Design Signoff															

	Financial Year													2017/2018													2018/2019										
	Financial Quarter		Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4		
	Calendar Year												2017													2018									2017		
	Calendar Quarter		Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1		
	Month	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
	Detailed Design Phases																																	
Design Phase																																		
	Requirements Definition																																	
	Solution Design																																	
Additional Solution Development Phase Procurement																																		
	Develop & Issue RFP																																	
	Receive RFP Responses																																	
	Evaluate RFP Responses & Select																																	
	Contract Selected Bidder(s)																																	
Solution Development Phase																																		
	Mobilisation																																	
	Project Team Induction																																	
	Expand Project Office																																	
	Establish Project Plan																																	
	Establish Development Environment																																	
	Database Configuration																																	
	Master Data Entry																																	
	Development Standards																																	
	Screen Development																																	
	Prototype																																	
	Application																																	
	Programme Search																																	
	Payment Recon																																	
	Institution																																	
	Registration																																	
	Referral																																	
	Validation																																	
	Carry-over																																	
	Public website																																	
	Clearing House																																	
	Workflow Development																																	
	Stage Transitions																																	
	Integration Triggers																																	
	Interface Development																																	
	Internal development																																	
	Institutions																																	
	NSFAS																																	
	Results Upload																																	
	Home Affairs																																	
	External Development																																	
	Institutions																																	
	NSFAS																																	
	Results Upload																																	
	Home Affairs																																	
	Scheduling and Controlling																																	
	Report Development																																	
	Component Integration																																	
	Scanning Tool																																	
	Content Manager																																	
	Document Manager																																	
	User Directory																																	
	SMS/Email Server																																	
	Payment Gateways																																	
	Credit Card																																	
	Easypay																																	
	User Group Feedback																																	
Testing Phase																																		
	Test Data Development																																	
	String Testing																																	
	Integration Testing																																	
	System Testing																																	
	Acceptance Testing																																	
	User Testing																																	
	Operational Simulation																																	
	Stress Testing																																	

Financial Year	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
	Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3
Calendar Year	2015 2016	2016	2017	2018	2019	2020	2020	2020
	Q4 Q1 Q2	Q3 Q4 Q1	Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4
Phases	Enterprise Architecture Phase	Design Phase	Build & Establish Phase			Launch & Roll-out Phase		Business As Usual Phase

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Notes
- Scheduled Activity
- Activity can start before or continue after Schedule
- Ongoing Activity
- Activity shortened for Aggressive plan

Financial Year	2015/2016		2016/2017				2017/2018				2018/2019				2019/2020				2020/2021				2021/2022				2022/2023		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Calendar Year	2015		2016				2017				2018				2019				2020				2020				2020		
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Phases	Enterprise Architecture Phase			Design Phase			Build & Establish Phase												Launch & Roll-out Phase								Business As Usual Phase		

Phases

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- 4.4 Recruit Staff
  - Staff to Build & Establish
  - Staff to Manage
  - Staff to Launch
- 4.5 Secure Operational Premises
  - Secure Office Location(s)
  - Secure Furnishing & Equipment
- 4.6 Secure & Equip Points of Presence
  - CAS-owned
  - Service Partners
- 4.7 Launch Preparation
  - Staff Training
  - Point of Presence Training
  - Institution Training

5 CAS Solution
- 5.1 Requirements Definition Phase Procurement
- 5.2 Requirements Definition
- 5.3 CAS Platform and Academic Programme Database Decision
- 5.4 Solution Design & Development Phase Procurement
  - Secure Project Environment
  - Secure Project Equipment
- 5.5 Solution Design
- 5.6 Additional Solution Development Procurement
- 5.7 Solution Development
- 5.8 Solution Testing

6 Service Launch
- 6.1 Readiness Assessment
- 6.2 National/Central Programme DB Launch
- 6.3 CAS Solution Launch
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- 6.6 CAS Roll-out 3

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- 7.4 Design Marketing Campaign
- 7.5 Secure Media
- 7.6 Launch Marketing Campaign
- 7.7 Roll-out Marketing Campaign

8 Transitional Arrangement
- 8.1 Transitional Preparation
- 8.2 KZN CAO incorporation into CAS
- 8.3 Transition Launch Preparation
- 8.4 Transitional Application Launch

Notes

- Scheduled Activity
- Activity can start before or continue after Schedule
- Ongoing Activity