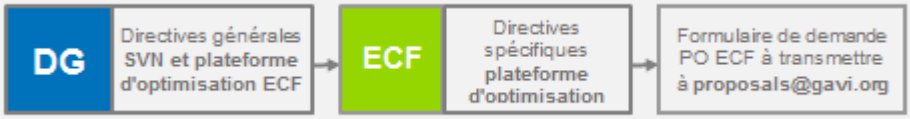
Cold Chain Equipment Optimisation Platform Support Application
for May-June 2017

Document dated: April 2017

Application documents for 2017:

Countries applying for Gavi Cold Chain Equipment (CCE) Optimisation Platform support in 2017 are advised to refer to the following documents in the order presented below:



CCE Application Form

Purpose of this document:

This application form must be completed in order to apply for support related to the CCE Optimisation Platform.

Applicants are required to first read the General Guidelines for all types of support, followed by the CCE Optimisation Platform guidelines. Thereafter, applicants should complete this CCE Application Form and submit by email to proposals@gavi.org.

ECF ST

Available resources to support completing this application form:

Technology guide for equipment selection for counties wishing to request CCE Optimisation Platform support is available here: www.gavi.org/support/hss/cold-chain-equipment-optimisation-platform/

Extensive technical resources relating to vaccine cold chain equipment management are available on TechNet-21: www.technet-21.org/en/resources/cold-chain-equipment-management

Weblinks and contact information:

All application documents are available on the Gavi Apply for Support webpage: http://www.gavi.org/soutien/processus/demander/. For any questions regarding the application guidelines please contact countryportal@gavi.org or your Gavi Senior Country Manager (SCM).

☆	Countries are informed that based on post IRC recommendations, **final approved amounts may be different from what countries have requested.** **This final approved amount will be dependent on the availability of funding.** **Gavi will respect countries' first equipment selection. However, countries could also receive their 2nd or 3rd preference based on their selection in the budget.**

CONTENTS

PART A: APPLICANT INFORMATION

1. Applicant information		
Country	CÔTE D'IVOIRE	
Date:	02/08/2017	
Contact name	Prof. EKRA, Kouadio Daniel	
Email address	kdanielekra@yahoo.fr	
Phone number	+225 07 26 12 32 / +225 02 00 26 93	
Total funding requested from CCE Optimisation Platform (**US $**)	Joint Gavi investment ($): **2,798,858** Joint country investment ($): **2,798,858** Total funding requested ($): **5,597,716** **Joint State funding will be paid from HSS funds or the available amount for this purpose is $ 3 053 893.**	
Does your country currently have an approved Gavi HSS grant?	**Yes** ☐	No ☐
	*Indicate the anticipated **final year** of the HSS: 2021*	
Proposed CCE Optimisation Platform support start date (please be informed the actual start date should be at least 8-10 months from application date):	*Indicate the month and year of the planned start date of the support, based on the strategic deployment plan:* *October 2018*	
Proposed CCE Optimisation Platform support end date:	*Indicate the month and year of the planned end date of the support, based on the strategic deployment plan:* *October 2021*	
4. Signatures *Include signed (and official) CCE Optimisation Platform application endorsement by:*	*We the undersigned, affirm the objectives and activities of the Gavi CCE Optimisation Platform proposal are fully aligned with the national health strategic plan (or equivalent) and that the funds for implementing all activities, including domestic funds and any needed joint investment, will be included in the annual budget of the Ministry of Health:*	

a) *Minister of Health and Minister of Finance (or delegated authorities)* b) *Members of the Coordination Forum (HSCC/ICC or equivalent body)*	**Minister of Health (or delegated authority)** **Minister of Health (or delegated authority)** **(JOINT SIGNATURE PHASE IN SCANNED VERSION)** Name: KOUADIO, Konan Raoul Name: Karim TRAORE Signature: Signature: Date: 30 AUGUST 2017 08 SEPTEMBER 2017

Executive summary
Located in West Africa between 10° north latitude and 4-8° west longitude, Côte d Ivoire covers a surface area of 322,462 Km². It has a tropical humid climate. Annual rainfall varies from 2,300 mm in the south to 900 mm in the north. Temperatures are generally high, averaging 30°C. Administratively, Côte d'Ivoire is divided into two administrative regions. The decentralised regional administration, with 2 autonomous districts (Abidjan and Yamoussoukro), 31 regions, 108 departments, 410 sub-prefectures and more than 8,600 villages, and the decentralised regional administration with 31 regions and 197 communes. Cote d'Ivoire has been supported by Gavi since 2002 and is currently in the initial transition phase.

Its health system is organised on three (3) levels: (I) the central level with the cabinet of the Minister, the central departments and units and health programmes in charge of defining policy, support and global health coordination; (ii) the intermediate level consisting of 20 Regional Departments responsible for supporting health districts for implementing the health policy, and (iii) the peripheral level consisting of 82 Departments or Health Districts in charge of coordinating the health activity in their region and providing operational and logistical support for health services. The health district is the operational unit of the health system and is subdivided into health districts.

EPI activities are coordinated at the central level, by a Coordination Department, at the intermediate level by Regional Departments and at the operational level by Health Districts, which have 2,153 immunisation centres. Immunisation will be conducted using permanent, advanced and mobile strategies. These strategies are complemented by other specific approaches such as active search for those lost to follow-up.

The supply chain consists of a central storage facility, ten regional storage facilities, 82 district storage facilities and 2,153 service delivery sites. The EPI has six 10-tonne utility trucks and six 5-tonne refrigerated trucks to distribute inputs up to the regional level on a "push" basis. Each of these storage facilities that store inputs supply a group of districts, which are replenished on a "pull" basis. Human resources consist of 10 supply chain agents and one supply chain agent per regional storage facility. At the district level, the 82 storage facilities are each managed by an EPI coordinator. The 2,153 service delivery sites are each managed by a centre manager and the sites are supplied monthly by the district storage facility on a "pull" basis.

Administrative immunisation coverage of children aged 0 to 11 months for Penta 3 varies from 79% to 107% in health regions. Even if immunisation coverage is satisfactory at the national level for certain vaccines, there is a disparity in various health regions that have not achieved the established targets with rates of 45% for MCV in the Bounkani-Gontougo region. In 2015 (external EPI review), only half of children aged 12-23 months were completely immunised for polio, the pentavalent vaccine (DTC-HeptB-Hib), the oral polio vaccine (OPV), the measles vaccine (MCV), the yellow fever vaccine (YFV) and the tetanus vaccine (TT). The principal factors that impede vaccine performance are: (I) recurrent stock-outs of vaccines and injection supply inventory, (ii) poor implementation of the outreach strategy by certain health care zones, and (iii) poor immunisation promotion in certain regions. By complying with the Vaccine Independence Initiative, the country stopped stock-outs at the central level but the problem persists at the peripheral level due to poor storage capacity and deficiencies in the distribution system.

The EVM conducted in 2015 identified weaknesses at various levels. The E7 (Distribution), E6 (Inventory management), E4 (Buildings, equipment, transportation) and E5 (Maintenance) criteria reported the lowest scores, with 45% for E7, 60% for E6 and E4, and 65% for E5. Only the E8 (Vaccine management) and E3 (Storage capacity) criteria report scores above 80%, at 84% and 83%, respectively. The post-EVM improvement plan was 70% completed as of June 2017. Management and

infrastructure were strengthened at the central level. To date, efforts have been made to make recommendations at the regional and peripheral levels.

The CCE inventory performed in 2016 indicated that the EPI's slow cold chain consists of 3,145 pieces of equipment, of which 24 are positive cold rooms, 11 negative cold rooms, 209 freezers and 2,901 refrigerators. 83% of these 3,145 pieces of equipment are functional. The equipment base, although not yet completely PQS, is approaching it with 60% at the district storage facility level and 41% at the service delivery level. With regard to their functional status, it must be noted that district storage facilities have a larger proportion of non-functional equipment than the other levels, with a proportion of 23%. Equipment functionality at the central level is good at more than 90%, with that of the service provision level is 77% of equipment in good condition. The existence of new equipment not yet installed must be noted, the proportion of which is 4% at the district storage facility level and 1% at the service delivery level.

There is a disparity in the distribution of PQS equipment at the service delivery level. Thus, only 38% of the live birth cohort benefits from an operational CCE and approved PQS, and only 26% of establishments have sufficient capacity with an operational CCE and approved PQS. In view of this situation, significant efforts must be made so that the slow cold chain equipment is completely PQS approved and that the functionality and ageing conditions are improved at all levels. This is the reason why Côte d'Ivoire filed an application for CCEOP.

This request fits well into the Côte d'Ivoire health policy and the Comprehensive Multi-Year Plan of the EPI . It aims to improve immunisation coverage for all vaccines, as indicated in axis 4 of the 2016-2020 National Health Plan (PNDS). It is also in line with the 2016-2020 cMYP that makes strengthening cold chain equipment a priority (National Health Plan, page 47).

The Côte d'Ivoire CCEOP application was participative and inclusive. This process was conducted by the national logistical work group (CTGL-Immunisation) under the coordination of the ICC. Also involved were State agents, civil society organisations and Alliance partners. The Ministry of Budget assured the committee of its effective participation to guarantee its commitment to support the process.

The proposal is based upon the rehabilitation plan prepared using the inventory and gap analysis tool. The analysis was based upon (i) the 2018 - 2022 planning period; (ii) segmentation of establishments; (iii) the depreciation period of the equipment; (iv) the characteristics and goals of the programme by vaccine according to the 2016-2020 cMYP ; and (v) the list of equipment approved by WHO and UNICEF (PQS). In total, 24 segments were identified, 4 of which were not established (segments 15, 19, 23 and 24). Therefore:

The replacement/rehabilitation will affect segments 1, 2, 3, 4, 21, and 22: these are existing service delivery sites with existing NON-PQS equipment (which are not operational) that must be replaced.

The expansion will affect segments 5, 6, 7, 8, 17, 18 and 20: these are existing service delivery sites that require additional equipment in order to address the introduction of new vaccines and/or serve a growing population. Health districts will be taken into account in this category.

The extension will affect segments 9, 10, 11, 12, 13, 14 and 16: these are existing sites and new service delivery points (taking into account sites that offer or do not offer immunisation and those that have no active equipment [refrigerator]) to equip with platform equipment.

The most urgent needs were distributed over the first two years corresponding to the initial support phase and the other needs over the last three years, the scale-up support phase.

The total funding requested to cover needs from now until 2021 is $5,597,716, with 50% Gavi co-financing, ie, $2,798,858. The country's joint funding will be provided by HSS funds intended to logistics strengthening. The amount reported for co-financing in the HSS2 funds platform is $3,053,893.

The Cote d'Ivoire CCEOP proposal is in line with the ongoing HSS2 (2017-2021). It specifically fits in with objective 4, which is vaccine storage capacity building in the 82 health districts by 2021. This proposal and the ongoing HSS2 are complementary in nature. In fact, the ongoing HSS2 will help ensure both the training of supply chain agents and district managers to better manage cold chain equipment as well as to provide for their training and preventive maintenance and supervision of the logistics chain (objective 4). Besides the purely logistical component, the HSS2 will help immunisation coverage and equity by improving the targeted service offered, improving demand generation and lastly improving data quality.(goals 1, 2 and 3).

Applying to the platform also helps achieve coverage and equity by eliminating the bottlenecks related to cold chain equipment. In fact, the initial support phase will allow the 313 health facilities without CCE to be equipped in order to bring immunisation services to the population. Likewise, the solar equipment to be procured within the context of the platform will allow sites without electricity to benefit from immunisation service just like other locations. In fact, 25% of the country's health facilities do not have access to the power grid or have insufficient power available (less than 8 hours a day).

The platform opportunity will allow the country to revitalise its cold chain equipment maintenance system, especially to review of the maintenance policy with outsourced corrective maintenance and implement a monitoring system for such maintenance.

PART B: MANDATORY ATTACHMENTS: NATIONAL STRATEGIES AND PLANS

This section provides a list of national strategies, plans and documents relevant to supply chain and requested support, which must be attached as part of the application.

☆	All documents listed in the table below are **mandatory**, must be attached to your application, and they must be **final** and **dated**. Only **complete applications** will be assessed.

2. Mandatory attachments:					
No.	**Strategy / Plan / Document**	**Attached Yes/No**	**Final version (dated)**	**Duration**	**Comments**
1	Signature sheet for the Minister of Health and Minister of Finance, or their delegates	Yes	08 September 2017		
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal[1]	Yes	25 August 2017		
3	2016-2020 National Health Sector Development Plan	Yes	October 2016	2016 -2020	
4	cMYP 2016-2020	Yes	July 2016	2016 -2020	
5	Assessment of the EVM 2015	Yes	June 2015		
6	EVM 2015 Improvement Plan	Yes	June 2015		
7	EVM Annual Work plan **and** Progress Report on EVM Improvement Plan[2]	Yes	June 2017		

[1] In the case of HSS and CCE Optimisation Platform requests, minutes must reflect that both were discussed and endorsed.

[2]The EVM IP and annual work plan progress report must have been updated within three (3) months before applying for Platform support.

2. Mandatory attachments:					
No.	**Strategy / Plan / Document**	**Attached Yes/No**	**Final version (dated)**	**Duration**	**Comments**
8	WHO CCEI Tool/UNICEF IMT/PATH CCEM Tool/CHAI tool[3, 4]	Yes	Oct 2019		
9	CCE Inventory Report **and** Facilities Segmentation Plan	Yes	April 2017		
10	Single document: Chapter 1: Cold Chain Rehabilitation and Expansion Plan Chapter 2: Projected Coverage and Equity Improvements Chapter 3: Strategic Deployment Plan Chapter 4: Equipment Selection	Yes	August 2017		
11	Maintenance Plan with financing and source(s)	Yes	August 2017		
12	Proof of status for CCE tariff exemptions waiver	Yes			
13	Terms of Reference for the relevant Coordination Forum (such as ICC) including all sections outlined in Section 5.2 of the General Application Guidelines	Yes			
14	Minutes of the Coordination Forum meetings from the past 12 months before the proposal	Yes			
15	Other relevant documents				

3. How do the above strategies, plans and documents inform the CCE Optimisation Platform support request (initial support and scale-up support)? *(Maximum 1 page)*
Countries are encouraged to reference relevant sections of the above documents as much as possible.

[3]The CCE Inventory must have been updated within no more than one (1) year of applying for Platform support.

[4]The tool should allow IRC members to determine the contribution of equipment deployment towards improving coverage and equity of immunisation.

The application for cold chain equipment optimisation platform support fits with the Côte d'Ivoire health policy and the EPI comprehensive multi-year plan. It aims at improving immunisation coverage for all vaccines. This improvement is part of the 4th axis of the Côte d'Ivoire 2016-2020 National Health Plan (PNDS) and especially the intermediary effect 4.4 (PNDS, page 52). To achieve this goal of improving immunisation coverage, cold chain equipment must be emphasised in terms of procurement and maintenance to improve ongoing availability of quality vaccines. Furthermore, the 2016-2020 cMYP made strengthening cold chain equipment and means of transportation at all levels (cMYP, page 47) a priority. Therefore, the cMYP planned to:

- strengthen vaccine storage capacity at all levels;
- build capacities of all maintenance facilities (DIEM, CREMM and AMD) for the ministry's equipment.

The platform support application is based upon various documents, including the inventory report, the cold chain rehabilitation, extension and expansion plan, and the maintenance plan.

In fact, the inventory enabled (i) mapping cold chain equipment; (ii) assessing the operational status of cold chain equipment and rolling stock; (iii) determining the number and distribution of equipment that meets WHO/UNICEF standards; (iv) updating the national cold chain equipment management file. This inventory was used as the basis for the cold chain rehabilitation plan, the goal of which is to improve the quality of Expanded Program on Immunisation services with the following specific goals:

- build storage capacity in the storage facilities to handle the introduction of new vaccines and the growth of EPI target populations;
- standardise cold chain equipment in accordance with PQS specifications;
- gradually replace gas-operated equipment with solar equipment;
- strengthen the availability of quality vaccines at all levels of the health pyramid;
- make an advocacy document available to the partners.

This cold chain rehabilitation plan also highlights the various segments comprising the basic elements for selecting equipment.

4. Describe how supply chain stakeholders (including Coordination Forum (ICC/HSCC or equivalent), government, NLWG, NITAG, key donors, partners, CSOs and key implementers) have been involved in the application development including if the quorum at the endorsing meeting was met

Does the country have a permanent and functioning National Logistics Working Group (NLWG)? If not, does the country plan to establish one and when?

Gavi and its Alliance partners encourage the establishment of such a group that coordinates Government and non-Government partners 'activities and investments related to the health supply chain including immunisation.

Have one or more Gavi requirements not been met to ensure basic functionality of Coordination Forums? Please explain the reasons and the approach to address this issue (refer to section 5.2 of the General Guidelines for the requirements *(no more than 1 page).*

In Côte d'Ivoire, the Inter-Agency Coordinating Committee (ICC) is the final decision-making and coordination body for the EPI. It is composed of the Ministry of Health, other technical Ministries and Government institutions, Alliance partners, other technical and financial partners of the country and civil society organisations (see the order creating the ICC is attached hereto). Its technical body is the Limited Thematic Group (LTG), which prepares ICC meetings and conducts the process of drafting application documents for various grants. The LTG heads all other EPI technical work groups, including the National Logistics Work Group, called the CTGL-Immunisation, which conducted the process of drafting the platform application. Thus, various work groups were established under the coordination of the CO-EPI.

The technical areas of the Ministry of Health and Public Hygiene [the General Directorate of Health (GDH), the Directorate of Infrastructures, Equipment, and Maintenance (DIEM), the Directorate of Financial Affairs, the National Institute of Public Hygiene (NIPH), and the Coordination Office for the Expanded Programme on Immunisation (CO-EPI), which, together with the NIPH, acts as secretariat of the CTGL-Immunisation], the Alliance partners (WHO, UNICEF), and the Agency for Preventive Medicine (AMP) participated in group work.

The technical areas of other Ministries (Cabinet of the Prime Minister, the Ministry of Economy and Finance, the Ministry of the Budget, the Ministry of Planning and Development) and civil society organisations, represented by NGO members of the National Federation of Health Organisations in Côte d'Ivoire (FENOS-CI) participated in preparing HSS2, a portion of the budget for which will be used for platform co-financing.

The health districts that are the first beneficiaries of cold chain equipment participated in the CCE inventory and in determining priority needs. The population, which is the end beneficiary, was involved in various phases of decision-making through civil society organisations. The DIEM specifically prepared an equipment maintenance and replacement plan and mobilised resources to fund this plan in conjunction with the CO-EPI, DAF and the Ministry of the Budget, Economy and Finance.

The draft of the application document was validated by the CTGL-Immunisation, then passed by the RTG and submitted to the ICC for approval, which approved it in its regular meeting on 24 August 2017. The quorum was easily met in this approval meeting (see attendance list attached hereto).

The country has a national logistics work group (CTGL-Immunisation), formalised by order no. 134/MSLS/CAB dated 20 March 2015. CTGL-Immunisation is a technical sub-committee of the National Commission for Coordinating the Procurement of Essential Drugs and Strategic Health Products in Côte d'Ivoire (CNCAM-CI). The ToR of this committee were reviewed in 2017 to better address the issue of EPI logistics.

Coordination forums exist and operate according to Gavi requirements but, with regard to the ICC, need to expand health system partners in Côte d'Ivoire that up to now have not been represented. The review process, which is underway, will take into account new Gavi requirements.

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

This section gives an overview of the types of information the IRC will anticipate from countries in their application for CCE Optimisation Platform support. This section must be filled with appropriate reference to the country documents listed in Part B. Countries are required to provide a narrative in response to the following questions.

5. Situation analysis of country's supply chain and CCE (number, distribution, functionalities etc) (Maximum 3 pages) *Please respond to all questions.* Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

a) How is the country's immunisation supply chain administered?
b) What weaknesses have been identified in the country's supply chain?
c) Through what interventions are these weaknesses currently being addressed?
d) Describe challenges that are hindering the implementation of these interventions.
e) Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.
f) What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?
g) Please indicate the quantity and percentage of current CCE that: a) works; b) is PQS (performance, quality, safety) approved; c) is not PQS approved; and/or d) is obsolete?
h) What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?
i) What are the bottlenecks that CCE can address in the current supply chain set up (for example, capacity and technology constraints)?
j) Describe any other supply chain challenges that CCE Optimisation Platform support will assist in mitigating?
k) What are the overall CCE needs?

a) The vaccine supply chain consists of the central level, a regional level with 10 regional storage facilities, and a peripheral level with 82 district storage facilities and 2,153 immunisation centres. Vaccine needs are projected at the central level, based upon a UNICEF immunisation forecast tool, during a workshop in which the EPI, the NIPH, the PNLP and the PNN participate, as well as the partners (UNICEF, WHO, AMP). The central level is supplied semiannually for traditional vaccines. Because of their volume, the rotavirus and PCV-13 vaccines are delivered every three (3) to four (4) months. The central level supplies the regional storage facilities quarterly, based upon an established distribution plan. At the intermediate and peripheral levels, the current system is organised so that the health districts are supplied with vaccines and consumables monthly at regional branch storage facilities, and the immunisation centres are supplied monthly at the district level.

b) The following weaknesses were identified by supply chain level (see rehabilitation plan, page 13):

- Central level

- Delays in customs clearance of vaccines and supplies
- Insufficient training of agents involved in vaccine management
- Insufficient capacity for storing consumables

- Region level

- Insufficient use of management tools;
- Insufficient training of storage facility managers;
- Insufficient storage capacity of vaccines due to the introduction of the rotavirus vaccine

- District Level

- Insufficient training of storage facility managers;
- Absence of continuous temperature recorders in refrigerators;
- Insufficient equipment maintenance. 41% of equipment requires repairs;
- Insufficient storage capacity of vaccines due to the introduction of the rotavirus vaccine
- Absence of SOPs
- Lack of temperature monitoring

- Service delivery level

- Insufficient training of storage facility managers;
- Absence of continuous temperature recorders in refrigerators;
- Only 58% of facilities have sufficient capacity with operational, PQS approved CCE;
- Insufficient equipment maintenance.

c) To remedy these weaknesses, several actions were taken:

- Annual exemption for vaccines and consumables granted to the EPI to accelerate customs clearance.
- Construction of a 600 m3 dry store underway;
- Capacity building of storage facility managers in vaccine management and maintenance in the last quarter of 2017;
- Adapting pace of supply at the district level to accommodate rotavirus vaccine storage;
- Creation of 18 new regional storage facilities equipped with cold rooms;
- Development of an information management system in order to network the various storage facilities and provide good data management;
- Organisation of specific training on log-tag use followed by distribution in August 2017;
- Involvement of the DIEM in monitoring cold chain equipment;
- Review of cold chain equipment maintenance policy with strengthening of service provider activity monitoring by the CO-EPI (see maintenance plan).
- Completion and implementation of national equipment maintenance management directives.

d) Barriers to implementation of measures:

Barriers to implementation essentially relate to the availability of experienced human resources for monitoring corrective maintenance by external service providers.

Besides this barrier, cumbersome administrative procedures hinder implementation of the exemption granted by the government. Nevertheless, this issue is being resolved by establishing an exchange framework between various stakeholders.

e) Information from recent support of the supply chain.

Gavi funds (HSS1 and NVS) enabled the purchase of cold rooms (central and regional levels) and solar refrigerators to improve storage capacity. The purchase of refrigerated trucks and utility vehicles also improved the vaccine distribution system to regional storage facilities. The national government budget also helped to purchase refrigerators in districts and health care facilities. Furthermore, barriers were found in the deployment, installation and training for use of the equipment. The country's platform application will allow refrigerator needs to be covered in districts and health care facilities without functional cold chain equipment. In order to make the supply chain perform effectively, the country also plans, within the context of this platform, to replace old equipment and equipment that is not PQS compliant with higher performing equipment.

f) The cold chain equipment inventory showed that 75% of facilities have reliable access to the power grid for at least 8 hours a day (inventory report).

g) The current status of cold chain equipment in terms of quantity and percentage is as follows:
- Functional CCE: 2298, or 73%
- PQS-approved CCE: 1409, or 45%
- Non-PQS approved CCE: 350, or 11%
- Obsolete PQS (PIS): 1351, or 43%

h) 37% of the live birth cohort is served by functioning, PQS-approved CCE.

i) The cold chain equipment to be procured within the context of the platform will resolve the issue regarding non-PQS approved equipment currently used in health care facilities, exposing vaccines to freeze or heat risks. Unreliable energy sources in certain storage sites will require the provision of solar cold chain equipment. The platform will enable the facility's equipment to be correctly targeted, according to the size of the population and the energy source. It will allow issues of insufficient vaccine storage capacity at the regional and district level, the lack of continuous temperature recorders in refrigerators to be resolved, and maintenance to be optimised by procuring the latest generation CCE.

Procurement of CCE and installation by the supplier will be an opportunity for training maintenance technicians. Building storage capacity at all levels, taking into account the introduction of new vaccines, would reduce supply schedules and will also reduce costs and supply terms (efficiency strengthening).

j) Global CCE needs are as follows (see single document, page 18, table 5):

Equipment type	**Quantity**
TCW 4000 AC	229
TCW 2000 AC	452
TCW 2043 SDD	08
TCW 40 SDD	371

	TCW 3043 SDD	02

6. Expected immunisation coverage, equity and sustainability results (*maximum 2 pages*) *Please respond to all questions.*
Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

a) How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation? Examples may include (not exhaustive):
- *Geographically remote districts or those with low coverage*
- *Poorer communities (eg, in the poorest 10 % of the population)*
- *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*

b) What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?

c) How have these system design considerations impacted the choice of CCE to be supported by the Platform?

d) Specifically, how will Platform support help improve the sustainability of the supply chain system?

a/ How will the requested Platform support specifically contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation?

The 2015 external EPI review showed that there was no significant difference in immunisation coverage between boys and girls. Nevertheless, the targets living in urban areas had higher complete immunisation coverage than targets living in rural areas (52% compared to 39%). At the regional level, there was a strong disparity in immunisation coverage, varying up to two times between low coverage and high coverage zones. The regions with the lowest immunisation coverage were those in the north (39%), northeast (25%), northwest (29%) and southwest (35%). The 2011-2012 DHS-MICS also showed significant disparities, especially between children in the poorest households and those in wealthier ones. In fact, the percentage of children who are fully immunised was 39% among children in the poorest households, compared to 68% among children in wealthier households.

These disparities are explained in part by the absence, insufficiency, poor quality or poor distribution of cold chain equipment. The platform application will allow these causes to be tackled, which are directly related to cold chain equipment but will also indirectly provide a solution to other causes.

In fact, 25% of the country's health facilities do not have access to the power grid or have very low availability during the daytime. Procuring solar refrigerators will make immunisation services more effective and continuous in these health facilities.

For some geographically isolated locations, 445 new health centres[5] were constructed between 2011 and 2016 in order to reach populations affected by health services. Although functional, some of these health centres do not have CCE to properly offer immunisation services. The platform application will help provide a solution to this problem of inequity connected to geographic accessibility.

The total number of health facilities without CCE to date is 313, throughout the country.

Among the districts with low immunisation coverage, there are some with obsolete or inadequate cold chain equipment that may contribute to low immunisation coverage. Thus, the platform application will help resolve this situation.

Resolving issues related to cold chain equipment availability by applying to the platform will enable the EPI to focus on other EPI components in order to improve immunisation coverage goals and reduce disparities within districts and between districts in the country. In addition, the resources that the government may provide for purchasing cold chain equipment may be redirected to other EPI components, specifically to offer quality services and boost the demand for immunisation services., especially in areas where women have not achieved high levels of education.

b/ What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?

In order to make the supply chain more effective and help achieve coverage and equity goals, Côte d'Ivoire bases its policy on the results of various studies that allowed a situational analysis to be performed: an external review of the 2015 EPI, the EVM conducted in 2015, the cold chain equipment and rolling stock inventory in 2016 and the 2011-2012 DHS-MICS. Based upon an analysis of these documents, the country prepared its 2016-2020 cMYP, which takes into account the vaccine procurement, quality and EPI logistics component. One of the strategies adopted in this component is capacity building for transporting inputs and EPI stakeholders to optimise the distribution system. With the support of HSS funds and new vaccine introduction funds, the country is in the process of making the regional level the core of the distribution system, with cold rooms with sufficient capacity that are capable of supplying the peripheral level with the necessary technical and logistics monitoring. These regional pools will constitute the intermediary storage facilities between the central and peripheral levels, equipped with cold rooms with adequate capacity and storage space for consumables, that can preserve much greater reserve inventories, thereby reducing the risk of stockouts at the FCHF level.

c/ How have these system design considerations impacted the choice of CCE to be supported by the Platform?

This procurement system design entails EPI storage capacity building at all levels. Prior efforts were made at the central and regional levels. The inventory taken at the end of 2016 showed a significant gap at the peripheral level. The selection of equipment was made in order to cover needs of health centres so as to provide vaccines on time for target populations. This selection also helps improve accessibility by populations to immunisation services where health centres existed but did not offer immunisation services.

[5] cMYP 2011-2015 ; cMYP 2016-2020 ; inventory tool 2016

d/ Specifically, how will Platform support help improve the sustainability of the supply chain system?

The sustainability of the supply chain system is a major concern for the Ministry of Health. To ensure sustainability, the Ministry chose to procure, through the platform, equipment adapted to the area where the populations live. Thus, solar equipment will be used in areas where access to electricity or good quality electricity is not possible. Furthermore, the country also chose to make the equipment uniform to facilitate maintenance. Advocacy with the government will be conducted to ensure maintenance and gradual replacement of equipment outside of platform support.

7. Maintenance plan (and its source of funding) and equipment disposal (*maximum 2 pages*) *Please respond to all questions.*

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

a) How will the country ensure that aspects of maintaining the cold chain are addressed (eg, preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, etc)?
- *What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?*
- *What technical support is anticipated for maintenance?*

b) How will the country monitor the completion of preventive and corrective maintenance?
- *Which funding source(s) will be used for upkeep? To what extent are they secured?*

c) How will the country dispose of obsolete and irreparable equipment replaced by CCE Optimisation Platform equipment?

a) Preventive and corrective maintenance are managed as follows:

Preventive maintenance

At the CO-EPI central storage facility level, preventive maintenance is performed by personnel who use the logistics department and by the private company under contract with the CO-EPI. The logistics department personnel are responsible for first level day-to-day and weekly preventive cold room maintenance.

The contractor performs systematic and monthly inspections and technical verifications of the operation of the cold rooms according to specifications. A technical report is prepared for each visit.

At the regional level, preventive cold room maintenance is performed by users and a private maintenance company. Like the central level storage facility, the users perform day-to-day and weekly preventive cold room maintenance, and the contractor performs systematic and quarterly inspections and technical verifications of the operation of the cold rooms.

At the health district and health centre level, preventive maintenance of refrigerators and freezers is performed by users: CEPI for the district and the health centre supervisor. The contractor performs systematic and quarterly inspections and technical verifications of the operation of the refrigerators and freezers.

Corrective maintenance

Corrective maintenance is performed at all levels by a private company, and service is provided when requested by the user. Service calls are recorded in the maintenance log for each device.

b) Supervision of proper performance of preventive and corrective maintenance will be performed as follows:

- AMD service reports will be sent to the health department directors, with a copy to CREMMs;
- CREMM service reports will be sent to regional and departmental directors, with a copy to DIEM;
- Service by private contractors must be validated by the CREMMs or AMD and sent to DIEM.
- DIEM will share with CO-EPI the service report analysis by CREMMs in their facilities;

CO-EPI has a budget lien item supported by partners. CREMMs have an operating budget from the government. Furthermore, their service will be supported by the CO-EPI if applicable.

c) Obsolete and irreparable equipment, replaced by CCE Optimisation Platform equipment, is disposed of as follows:

This equipment is disposed of according to the reformed government equipment procedures. It is managed by the Government Assets Department (DPE) of the Ministry of the Economy and Finance (Decree no. 2014-865 date 23 December 2014 organising the Ministry with the Prime Minister of the Budget; article 57). Equipment to be disposed of is managed on a case-by-case basis at the request of the ministry in question. These procedures are to be adapted to EPI cold chain equipment in order to decommission the equipment in an environmentally conscious manner, according to current federal and international laws. To date, a specific strategy for disposing of EPI cold chain equipment is being drafted based upon regulations for decommissioning electric and electronic equipment waste and environmental protection measures.

8. Other implementation arrangements (*maximum 1 page*) *Please respond to all questions.*

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

a) How will the country facilitate the manufacturer's or representative's role in equipment purchase, distribution and installation?
b) What is the source of the joint investment? Is the country's joint investment secured?
c) Has the country secured import tariff exemptions for CCE? If yes, attach proof.

a) How will the country facilitate the manufacturer's or representative's role in equipment purchase, distribution and installation?

The equipment will be provided through the UNICEF Supply Division and will benefit from agreements between the Ivorian government and the UNICEF country office, especially within the context of the memorandum of understanding signed between the two parties.

All equipment will be shipped by ocean, and the autonomous port of Abidjan will be the port of entry through which all equipment will be accepted. Accepted equipment will be stored in EPI dry stores (500 m3 net). It will then be deployed throughout the national territory by inland transport using six 10-ton utility vehicles available through the CO-EPI.

The Ministry of Health will make a detailed list of beneficiary sites for cold chain equipment available and will propose the operational distribution plan to the supplier. For this purpose, DIEM, Regional Health Directors and Departmental Health Directors will be involved in all phases of deployment in the districts and health facilities.

Before operational deployment of the equipment in the country, the CO-EPI, with the support of UNICEF and WHO, will organise training for DIEM, CREMM, AMD and CO-EPI technicians on assessing sites for installing solar equipment. This training will be followed by an assessment of all of these sites.

b) What is the source of the joint investment? Is the country's joint investment secured?

The country will use the HSS funds intended for logistics strengthening to guarantee the joint investment, which is 50% of the total platform budget.

The resources necessary for funding procurement of the equipment will be mobilised by the government through the approved HSS2 (2017-2021) and Gavi funds. The amount allocated for platform co-financing in HSS2 funds is US$ 3,053,893. According to estimates of our needs, the country's application will only be for the first four years (2018-2019-2020-2021) according to HSS2.

c) *Has the country secured import tariff exemptions for CCE? If yes, attach proof.*

The country has a customs duty exemption for vaccines and consumables, and there is a mechanism for obtaining an exemption applicable to equipment.

PART D: INITIAL SUPPORT PHASE

This initial support phase (approximately through years 1 and 2) is designed to address urgent CCE needs contributing to sustained improvements in coverage and equity, to protect vaccine stocks, complement investments in other supply chain 'fundamentals' and contribute to full scale-up of optimised, sustainable supply chains.

☆	Budgets **do not include** operational costs. Operational costs must be financed by Ministry of Health or other partners.

ECF	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Annex 3 of the CCE Optimisation Platform Guidelines, available at http://www.gavi.org/soutien/processus/demander/

9. Prioritised (Urgent) CCE needs (maximum 3 pages)	
*Provide information on **2 to 4 prioritised (urgent) CCE needs** as identified in the "CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements."* *For each prioritised (urgent) CCE need, please provide the following information:* *1. **The need**: type of activity (eg replacing obsolete CCE equipment, adding CCE to facilities that are not equipped, etc); site (facility) specific CCE; type of equipment required; quantity of devices.* *2. **Justification**: Reasons for urgent need (eg, low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc); current CCE and immunisation (Penta3) coverage in the population area.* *3. **Expected outcome**: anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country performance framework).* *4. **Total CCE budget:** includes Gavi and country joint investment share*	
Prioritised (Urgent) CCE Need #1	
The need	Extension of 279 service delivery sites with 129 TCW 2000 AC, 01 TCW 2043 SDD and 97 TCW 40 SDD and 01 TCW 3043 SDD and 51 TCW 4000 AC. Expansion of storage facilities in 22 districts with 32 TCW 4000 AC.

Justification	These facilities have no equipment for vaccine storage. The populations covered by these facilities are vulnerable and mostly located in isolated areas. Their selection for the first year of the initial support phase will enable equitable access to quality vaccines to be established for all populations, regardless of their accessibility. It will also impact 22 district storage facilities that do not have the required storage capacity due to increased population growth and/or depreciation and introduction of new vaccines.
Expected outcome	Equity in access to good quality vaccines for each population, regardless of location, is guaranteed.
Total CCE budget	US$ 1,605,308, of which US$ 802,654 for Gavi.
Prioritised (Urgent) CCE Need #2	
The need	Expansion of 517 service delivery sites with 323 TCW 2000 AC, 7 TCW 2043 SDD, 103 TCW 40 SDD, 1 TCW 3043 SDD and 83 TCW 4000 AC. Expansion of one district storage facility with one TCW 4000 AC.
Justification	These facilities, although they have some approved CCE, all have inadequate storage capacity in relation to the required capacity. This situation jeopardises the quality of vaccines used at these levels and makes the populations covered by these facilities vulnerable. These facilities are prioritised for the second year of the initial support phase. Their selection as a priority will enable equity in access to quality vaccines to be established for each population. It will also impact one district storage facility without the required storage capacity due to increased population growth and/or depreciation and introduction of new vaccines.
Expected outcome	Equity in access to good quality vaccines for each population, regardless of location, is guaranteed.
Total CCE budget	US$ 2,447,665, of which US$ 1,223,832 is Gavi
GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)	**US$ 4,052,973,** of which **US$ 2,026,487** is Gavi

10. Summary of INITIAL SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these pieces of equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. See Section 6.2 of the CCE optimisation Platform Guidelines for the definitions of replacement/rehabilitation, expansion and extension. The values entered below must align with those in Section 9 above and in other parts of the application form.

	Replacement/Rehabilitation	Expansion:	Prorogation

Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping previously unequipped sites (providing immunisation services or not, including existing sites without active device and add new service delivery sites	
No. of equipment	No. of sites	No. of equipment	No. of sites	No. of equipment	No. of sites	No. of equipment	No. of sites
				323 TCW 2000 AC	323 SP	129 TCW 2000 AC	129 SP
				7 TCW 2043 SDD	7 SP	1 TCW 2043 SDD	1 SP
				103 TCW 40 SDD	103 SP	97 TCW 40 SDD	97 SP
				1 TCW 3043 SDD	1 SP	1 TCW 3043 SDD	1 SP
				83 TCW 4000 AC	83 SP	51 TCW 4000 AC	51 SP
				33 TCW 4000 AC	22 LD		
				550 CCE	**517 SP and 22 LD**	**279 CCE**	**279 SP**

11. Ongoing or planned activities around other supply chain fundamentals in the initial support phase

In this section, linkages must be drawn between requested CCE Optimisation Platform support, on-going Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support.

Describe planned or ongoing activities related to other supply chain fundamentals (see section 3.1 of the CCE Optimisation Platform Guidelines) during the initial support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.

Supply chain managers *Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.*	Within the context of optimising the supply chain in order to reach district storage facilities and intermediate storage facilities, bringing the number of intermediate storage facilities from 10 to 20, logistics personnel will be hired at both the central and intermediate levels. With an increase in the number of cold rooms, monitoring will be

	strengthened by creating a central team, the role of which will be to monitor major supply chain equipment. Furthermore, a project consisting of making district and regional pharmacists responsible for monitoring supply chain operations is underway. All of these personnel will benefit from capacity building. All of these actions will be funded by the government, with support from partners.
Data for supply chain management *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.*	Data and information throughout the supply chain will be managed using three (3) tools, namely inventory management tools for major equipment involved in the EPI, the stock management tool and the immunisation activity management tool. These tools will be implemented at all levels, and the lower level will be required to send its information to the next higher level on a monthly basis. Each level will have the capability of analysing and interpreting the results of analyses. At the central level, a monthly bulletin will be published and distributed at all levels as feedback. The supply chain status will be presented periodically during national logistics management committee meetings. This process will strengthen the visibility of information throughout the supply chain for decision-making. All of these actions will be funded by the government with specific or ongoing support from partners.
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*	A quarterly distribution plan is established by the central level and distributed to the intermediate and district levels. The budget for implementing this plan is mobilised two (2) weeks before it is implemented with the government and its partners. Suitably adapted trucks with sufficient load capacity (six refrigerator trucks and 6 utility trucks) are used to distribute inputs to the intermediate level, where storage sites will soon be increased from 10 to 20, thus reaching district storage facilities from their procurement site.
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	The results of analysing various data will be used as a factual basis of supervisory training activities and for ongoing improvement of routine EPI data quality.

Temperature monitoring *Describe the temperature monitoring devices that are currently available in the country? For example, central level (CTMS), sub-national, lowest distribution and service delivery levels (30 DTRs and RTM devices), and during transportation (freeze tags - electronic temperature monitoring of goods subject to freezing)* *Please also describe which measures are in place to:* *a) obtain temperature data from the various devices;* *b) act following temperature alarms (corrective maintenance);* *c) in the case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and* *d) countries wishing to purchase such devices are required to demonstrate how the recurring costs, such as HR, data transmission, analysis etc., will be covered in this section.*	Currently, the temperature is read twice a day, with reporting logs at all levels. Temperature mapping was performed on the 12 cold rooms in 2017. During 2017 and subsequent years, all refrigerators in peripheral storage facilities will be equipped with 30-day continuous temperature recorders (log-tag). Furthermore, temperature is monitored monthly using data from stock management and immunisation data tools. These various types of information are compared and analysed for decision-making at all levels.

PART E: SCALE-UP SUPPORT PHASE

This second phase of Gavi CCE Optimisation Platform support will be provided from approximately year 3 onwards. This phase must take into account additional cold chain equipment needs within the context of optimisation and sustainability of the supply chain.

☆	Budgets **do not include** operational costs. Operational costs must be financed by Ministry of Health or other partners.

ECF	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Annex 3 of the CCE Optimisation Platform Guidelines, available at http://www.gavi.org/soutien/processus/demander/

12. Prioritised (Additional) CCE needs (*maximum 3 pages*)

*Provide information on **2 to 4 prioritised (additional) CCE needs** as identified in the "CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements."*

For each prioritised (additional) CCE need, please provide the following information:

1. ***The need**: type of activity (eg, replacing obsolete CCE equipment, adding CCE to facilities that are not equipped, etc); site (facility) specific CCE; type of equipment required; quantity of devices.*
2. ***Justification:** Please include: Reasons for urgent need (e.g. low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc.); current CCE and immunisation (Penta3) coverage in the population area.*
3. *Expected outcome: expected increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country performance framework).*
4. ***Total CCE budget:** includes Gavi and country joint investment share*

Prioritised (Additional) CCE Need #1	
The need	Expansion of 53 service delivery sites with 53 TCW 4000 AC and expansion of 3 district storage facilities with 3 TCW 4000 AC.
Justification	Although these facilities have PQ equipment, they have insufficient storage capacity. They will be taken into account in the first year of the scale-up support phase.
Expected outcome	Effective, approved equipment with adequate storage capacity ensure vaccine quality at service delivery sites and district storage facilities.
Total CCE budget	US$ 263,549, of which US$ 131,774 is Gavi
Prioritised (Additional) CCE Need #2	
The need	Rehabilitation of 171 service delivery sites with 171 TCW 40 SDD and expansion of 3 district storage facilities with 6 TCW 4000 AC.
Justification	These facilities, which initially had sufficient storage capacity, will need additional capacity taking into account population growth and/or depreciation of equipment. This equipment will be procured in the second year of the scale-up support phase. These facilities are considered less of a priority than those selected in the first phase of the scale-up phase because they have adequate storage capacity. These facilities do not have electricity.

Expected outcome	Effective, approved equipment with adequate storage capacity ensure vaccine quality at service delivery sites and district storage facilities.
Total CCE budget	US$ 1,281,194, of which US$ 640,597 is Gavi
GRAND TOTAL CCE BUDGET: "Scale-up support" (Years 3, 4 & 5)	**US$ 1,544,742, of which US$ 772,371 is Gavi**

13. Summary of SCALE-UP SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these pieces of equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. See Section 6.2 of the CCE optimisation Platform Guidelines for the definitions of replacement/rehabilitation, expansion and extension. The values er below must align with those in Section 9 above and in other parts of the application form.

	Replacement/Rehabilitation				**Expansion**		**Extension**	
	Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping existing sites and ne delivery points (providing immu services or not, including exist without active devices [refrigera equipped with platform equi	
	No. of equipment	No. of sites	No. of equipment	No. of sites	No. of equipment	No. of sites	No. of equipment	No. of sit
	171 TCW 40 SDD	171 SP			53 TCW 4000 AC	53 SP		
					9 TCW 4000 AC	6 LD		
Total	**171 CCE**	171 SP			62 CCE	53 SP and 6 LD		

14. Ongoing or planned activities around other supply chain fundamentals in the scale-up support phase	
In this section, links must be drawn between requested CCE Optimisation Platform support, on-going Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support. *Describe planned or ongoing activities related to other supply chain fundamentals (see section 3.1 of the CCE Optimisation Platform Guidelines) during the scale-up support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.*	
Supply chain managers *Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.*	Within the context of optimising the supply chain in order to reach district storage facilities and intermediate storage facilities, bringing the number of intermediate storage facilities from 10 to 20, logistics personnel will be hired at both the central and intermediate levels. With an increase in the number of cold rooms, monitoring will be strengthened by creating a central team, the role of which will be to monitor major supply chain equipment. Furthermore, a project consisting of making district and regional pharmacists responsible for monitoring supply chain operations is underway. All of these personnel will benefit from capacity building. All of these actions will be funded by the government, with support from partners.
Data for supply chain management *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.*	Data and information throughout the supply chain will be managed using three (3) tools, namely inventory management tools for major equipment involved in the EPI, the stock management tool and the immunisation activity management tool. These tools will be implemented at all levels, and the lower level will be required to send its information to the higher level on a monthly basis. Each level will have the capability of analysing and interpreting the results of analyses. At the central level, a monthly bulletin will be published and distributed at all levels as feedback. The supply chain status will be presented periodically during national logistics management committee meetings. This process will strengthen the visibility of information throughout the supply chain for decision-making. All of these actions will be funded by the government with specific or ongoing support from partners.
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*	A quarterly distribution plan is established by the central level and distributed to the intermediate and district levels. The budget for implementing this plan is mobilised two (2) weeks before it is implemented with the government and its partners. Suitably adapted trucks with sufficient load capacity (six refrigerator trucks and 6 utility trucks) are used to distribute inputs to the intermediate level,

	where storage sites will soon be increased from 10 to 20, thus reaching district storage facilities from their procurement site.
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	The results of analysing various data will be used as a factual basis of supervisory training activities and for ongoing improvement of routine EPI data quality.
Temperature monitoring *Describe how the temperature monitoring system will evolve? Which devices will be used? Please also describe which measures are in place to:* *a) obtain temperature data from the various devices;* *b) act following temperature alarms (corrective maintenance);* *c) in the case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and* *d) countries wishing to purchase such devices are required to demonstrate how the recurring costs, such as HR, data transmission, analysis etc., will be covered in this section.*	Currently, the temperature is read twice a day, with reporting logs at all levels. Temperature mapping was performed on the 12 cold rooms in 2017. During 2017 and subsequent years, all refrigerators in peripheral storage facilities will be equipped with 30-day continuous temperature recorders (log-tag). Furthermore, temperature is monitored monthly using data from stock management and immunisation data tools. These various types of information are compared and analysed for decision-making at all levels.

PART F: BUDGET TEMPLATES

This section details the number of requested equipment items and equivalent budget. A maximum investment amount (and indicative number of equipment items) corresponding to the phased support request will be considered for recommendation of approval by the IRC and subsequent decision by Gavi.

However, in consultation with the Secretariat and in-country partners, the number of equipment items may be modified when the detailed operational plan is developed subsequent to the Platform proposal and the support may vary within the limit of the approved maximum amount.

Budgets must be completed in the attached budget template, and with reference to the ***CCE Optimisation Platform Guidelines, Gavi CCE Optimisation Platform Technology Guide and CCE planning prices and Total Cost of Ownership (TCO) analysis tool.***

15. CCE Optimisation Platform - Budget Template

*To be completed by **ALL** countries after selecting the equipment that best suits their CCE needs (eg. specific model and make).*

Countries will plan with indicative PQS prices and corresponding service bundle estimates (depending on equipment being on/off-grid and estimated costs of service bundle).

Planning price ranges are provided in this template.

How to complete the attached budget template: Countries must:

- *Select the appropriate equipment model from the equipment list. This list is based on the "Equipment type and power source"*
- *Complete the 'Estimated service bundle cost' and 'Number of equipment' requested*
- *In cells **CA and CB** of the "Selection of specific CCE model" (to the right of the table entitled 'Total CCE OPTIMISATION PLATFORM APPLICATION"), indicate the second and third preference for each model selected. The two preferences should be in the same "Vaccine storage capacity segment" as the model selected.* **Gavi and Alliance members, specifically UNICEF, will do their utmost so that the countries receive their first choice equipment. Nevertheless, manufacturing delays, among other issues, may result in countries receiving cost estimates for their second or third choice.**

Completed budget template should be sent as an attachment along with application form.

Budgeting for buffer and UNICEF procurement fees

- ***Buffer fees:*** ***A 7% buffer on total equipment cost is built into country yearly budgets. This will cover currency variations, demurrage and associated costs and will be returned to country, if unused. Procurement fees:***
- ***UNICEF Procurement Division*** ***Countries must pay UNICEF annual procurement fees only on their joint investment. The fees will be less than or equal to 8.5% of the country's joint investment. Please obtain actual amounts from the UNICEF country office.***

PART G: PERFORMANCE FRAMEWORK

Countries must include **CCE Optimisation Platform indicators** in the application. The indicators need to be included in the Performance Framework for the current and/or proposed Gavi HSS support, after Platform proposal approval.

According to their specific context, countries are required to consider the most appropriate data sources to report on programme implementation and progress against the targets set. This should be discussed with partners (which may provide technical assistance) and the Gavi Secretariat.

Programmatic reporting updates, as well as targets and indicator updates, will be made as part of the Gavi performance framework and annual Joint Appraisal process. Countries are expected to consider relevant smart indicators to be monitored and reported against, in terms of intermediate results or outcomes/impact.

ECF	Further information on developing relevant indicators, including a list of possible data sources, is provided in Section 7.2 of the CCE Optimisation Platform Guidelines, available at http://www.gavi.org/soutien/processus/demander/

17. Indicator monitoring and reporting requirements

As a ***minimum****, countries need to monitor and report on:*

- ***Five MANDATORY intermediate results indicators;***
- ***One MANDATORY intermediate result indicators*** ***if countries are procuring User independent freeze protected cold boxes and vaccine carriers; and***
- ***One to three ADDITIONAL intermediate results indicator(s).***

MANDATORY intermediate results indicators *(must include baseline, data source, targets and frequency of reporting):*

1) ***CCE replacement/rehabilitation at equipped sites:*** *Percentage of existing sites (equipped or not equipped) with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with larger equipment)*
2) ***CCE expansion in existing equipped sites:*** *Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;*
3) **CCE extension in unequipped existing and/or new sites:** *Percentage of new service delivery sites (taking into account sites providing immunisation services or not, including existing sites without active devices [refrigerator]) to be equipped with Platform eligible equipment.*
4) ***Cold chain equipment maintenance:*** *Defined indicator proposed by the country to reflect appropriate equipment upkeep; for example, the percentage of facilities equipped with a working cold chain,[6] such as shown by remote temperature control.*
5) ***Freeze-free to non-freeze-free carrier ratio:*** *Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country*

USE THE TABLE BELOW TO COMPLETE MANDATORY INDICATORS

Indicator *(Provide name of indicator as shown above)*	***Definition*** *(Provide definition if not already specified)*	***Data Source*** *(identify data source)*	***Reporting frequency*** *(annual, semi-annual, quarterly, etc)*	***Baseline (Year)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*
Rehabilitation/replacement	*Percentage of existing sites (equipped or not*	*Operational deployment report*	*Annual*	*Numerator: number of rehabilitated facilities (0)*	*Year 2020:* *171/171 (100%)*	*Year 2021:* *171/171 (100%)*	

[6]**Indicator definition:** *% CCE functioning = (# functioning CCE devices) / (total # of CCE devices designated for use).* CCE devices considered for this indicator include all refrigerators, fixed passive storage devices, walk-in cold rooms and freezers designated for string vaccines. Both the numerator and denominator should be collected from the same geographical area / period in time and should not include decommissioned equipment. Functionality of CCE is broadly defined to mean that the device is operable at a particular point in time for storing vaccine.

	equipped) with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with larger equipment)			*Denominator: number of facilities to be rehabilitated 171* *Percentage: 0%*			
CCE expansion in existing equipped sites:	*Percentage of existing sites that were equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;*	*Operational deployment report*	*Annual*	*Year 2017* *Numerator =0* *Denominator =599* *Percentage =0%*	*Year 2018* *Numerator = 22* *Denominator =599* *Percentage =3.6%*	*Year 2019* *Numerator =539* *Denominator =599* *Percentage = 90%*	*Year 2020* *Numerator =592* *Denominator =599* *Percentage = 99%*
CCE extension in unequipped existing and/or new sites:	*Percentage of new service delivery sites (taking into account sites*	*Operational deployment report*	*Annual*	*Numerator =0* *Denominator =279* *Percentage=*	*Numerator =279* *Denominator =279*	*Numerator =279* *Denominator =279*	*Numerator =279* *Denominator =279*

	providing immunisation services or not, including existing sites without active devices [refrigerator]) equipped with Platform eligible equipment.				*Percentage = 100%*	*Percentage = 100%*	*Percentage = 100%*
CCE maintenance	*Percentage of facilities with functional PWS equipment*	*Maintenance report, inventory update report*	*annual*	*81%*	*90%*	*90%*	*90%*
Freeze-free to non-freeze-free carrier ratio		*N/A;*	*N/A;*	*N/A;*	*N/A;*	*N/A;*	*N/A;*

ADDITIONAL intermediate results indicator(s): *Countries are required to suggest 1 to 3 intermediate results indicators to track performance of rehabilitation, expansion, maintenance and/or other supply chain fundamentals (include baseline, data source, targets and frequency of reporting).*

Examples *of additional intermediate results indicators options are:*

1. ***The operating condition of the cold chain equipment:*** *proportion of operational CCE and proportion of districts that have at least 90% operational equipment;*
2. ***Wastage of sealed vials****: proportion on the national level by district and facility;*
3. ***Proportion of anticipated demand:*** *Ratio of actual usage compared to forecast (vaccines);*
4. ***Full availability of inventories****: proportion of facilities/districts that have experienced no stockouts*

a. *Inventory in compliance with the plan: percentage of facilities/stores/districts with inventory between the minimum and maximum inventory levels;*

5. ***Temperature alerts**: frequency and magnitude of heat and cold alarms per monitoring period (i.e., temperature excursion) and number of CCE devices with more than a certain level of temperature excursion;*
6. *Rate of health facilities dashboard use, timely analysis and use for decision making;*
7. ***On-time and complete delivery**: proportion of orders delivered in their entirety and on time; or*
8. *Number of health managers trained and despatched for supply chain oversight function and rate of reported monitoring activities.*

USE THE TABLE BELOW TO COMPLETE ADDITIONAL INDICATORS

Indicator *(Provide name of the additional indicators as shown above)*	***Definition*** *(Provide definition if not already specified)*	***Data Source*** *(identify data source)*	***Reporting frequency:*** *annual, semi-annual, quarterly, etc)*	***Baseline (Year)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*
*1. **:** Proportion of health centres that have had Penta3 stockouts*	*Number of health centres that have had Penta3 stockouts in relation to the number of health centres*	*DVD/MT* *MIS Inventory*	*Monthly*	*Numerator: 33* *Denominator= 2,153* *Percentage= 2%*	*Numerator: 0* *Denominator= 2,153* *Percentage= 0%*	*Numerator: 0* *Denominator= 2,153* *Percentage= 0%*	*Numerator: 0* *Denominator= 2,153* *Percentage= 0%*
2.							
3.							
Add more indicators HERE if needed.							