Hyperledger GAS Fee Distribution Smart Contract Algorithm Execution 1.0
超级账本 GAS 费分配智能合约算法执行 1.0

1. **Main chain:** Osasion

主链：Osasion 欧赛

2. **Hyperledger:** A cluster of master miners, including servers, databases, and protection servers that are configured to be deployed on the master node.

超级账本：主矿工的集群体，包含配置为主节点相关部署的服务器、数据库和防护服务器。

3. **Allocation object:** All Hyperledgers that are contracted and within the service period, that is, the Hyperledgers where the master node works stably during the service period during the validity period of the contract.

分配对象：所有签约并在服务周期内的超级账本，即签约有效期内主节点在服务周期内稳定工作状态的超级账本。

4. **Algorithm core collection index:** Contract time, payment time, deployment period, server online time, first allocation period, difference and actual service period.

算法核心采集指数：签约时间、缴费时间、布置周期、服务器上线时间、第一次分配周期、差额部分和实际服务周期。

5. **The basic index around the algorithm:** That is, the service cycle of arranging online nodes to normally participate in mining.

算法围绕的基础指标：即布置上线节点正常参与出矿的服务周期。

6. **Income substitution ratio:** According to the 10000GAS fee, the average value of the hyperbook collection address is 40%. Example: The first Hyperledger service cycle is 190 days, and the allocated amount for Hyperledger is 900 AUC calculations.

收益替代比值：按照 10000GAS 费，均值超级账本归集地址的 40%。示例：首次超级账本服务周期为 190 天，超级账本获配量为 900 个 AUC 计算。

First stage GAS allocation: 190-day cycle ratio: 52.05%; substitution ratio: 5.06%; AUC consensus target: 2.65$.

6.1 一阶段首次 GAS 分配：190 天周期占比：52.05%；替代比值：5.06%；AUC 共识标的：2.65$;

Two-stage GAS allocation: 45-day cycle proportion: 12.5%; substitution ratio: 1.65%; AUC consensus target: 3.1$.

6.2 二阶段 GAS 分配：45 天周期占比：12.5% ； 替代比值：1.65% ； AUC 共识标的：3.1$;

Three-stage GAS allocation: 20-day cycle ratio: 5.4%; substitution ratio: 2.2%; AUC consensus target: 4.3$.

6.3 三阶段 GAS 分配：20 天周期占比：5.4% ； 替代比值：2.2% ； AUC 共识标的：4.3$。

6.4 **Cycle full calculation:** The above superimposition plus the subsequent remaining is calculated according to the 20-day cycle, and the remaining 5.5 allocations. If the price increase rate is not taken into account in a quarter,

the median value is taken and calculated at 4.4$. At the end of the actual accounting period:

1375+250+250+900=2775AUC.

周期满算：以上叠加加上后续剩余按 20 天周期计算，剩余 5.5 次分配。若在一个季度内不计价格递增幅度，取起中间值，按照 4.4$计算，实际账本周期末：1375+250+250+900=2775AUC。

那么按当前计算：2775×4.4=12210U，当前替代比值：25.9%.

6.5 Estimated income statement of Hyperledger after the three-stage distribution algorithm:

三阶段分配算法后超级账本预估收益表：

Time Period 时间周期	Number of Transactions Per Day 日交易笔数	Number of Ledgers 账本数量	Mean GAS GAS 均值	Price Subject 价格标的	Number of Columns 列数	Number of Nodes 节点数量
2022.3	1852.8	50	430.8	4.3$	421	88500
2022.9	4650	55	683.9	6.8$	671	225000
2023.3	11957	60	1285.7	9.3$	921	424000
2023.9	24528	65	2078.6	11.8$	1171	685500
2024.3	59086	70	3739.6	15.8$	1571	1233296
2024.9	116559	75	5886.8	19.8$	1971	1941436
Cycle/day 周期(Day)	**Number of Allocations 分配次数**	**Get Total 获得总量**	**Estimated Price 预估价**	**Valuation 估值**	**Substitution Ratio 替代比**	
23	15	3000	4.73$	14190	30.1%	
14	26	4727	7.48$	35357	75%	
7	52	8666	10.32$	88653	188.2%	
4	91	13999	12.98$	181707	385.7%	
2	182	25999	17.38$	451862	959.3%	
2	182	24266	21.78$	528513	1122%	

(1) The total distribution value single time: 10000GAS fee. The calculation in this table ignores the price tag ladder, and uses the estimated price as a reference. The above valuation is based on the reference price, that is, a 10% increase in the price tag. First-tier data: the price target is 4.3$, and the final earnings estimate is calculated as 4.3×10%+4.3=4.73$.

总分配值单次：10000GAS 费。本表测算忽略价格标阶梯，以预估价为参考，上面估值以参照价格，即价格标的上浮 10%为计算依据。首梯队数据：价格标的为 4.3$，最后收益估值按 4.3×10%+4.3=4.73$计。

(2) The number of Hyperledgers is calculated at an average value of 50. Before the AUC consensus target exceeds

10$, it will be counted as 400 columns activated in half a year. After the AUC consensus target exceeds 10$, it will be counted as 300 columns activated in half a year, and the Hyperledger will increase by 5 in half a year. 超级账本数量按均值 50 个计。AUC 共识标的突破 10$前按找半年激活完成 400 列计，AUC 共识标的突破 10$后按照半年激活完成 300 列计，超级账本半年递增 5 个。 (3) The number of nodes is divided by the previous set of data to obtain the multiplication reference of the base GAS. 节点数量除于上一组数据得到基础 GAS 的倍增参照。
Current average GAS: 159AUC/day; current number of active nodes: 32545; according to the AUC consensus target of 4.3$, the ratio of nodes with 88500 activated nodes will be estimated at 2.71 times, then 159×2.71=430.8, 430.8× 4.3=1852.8$ is approximately equal to 1852 daily transactions. 目前 GAS 均值：159AUC/日；当前激活节点数：32545；按照 AUC 共识标的为 4.3$计算激活节点数为 88500 的节点比值将预估在 2.71 倍的水平，则 159×2.71=430.8 枚，430.8×4.3=1852.8$大约等于 1852 笔的日交易。 Time：17:00 PM on June 11st, 2021(GMT+8)

7. **Ladder algorithm:** Due to the large errors in the actual collected factors and time differences and the large uncertainty in the average of the same factors, the algorithm selection is more difficult in the primary code formation on the contract side, and the layered algorithm will be designed and the phased condition triggers the way to solve. Algorithm stage: one stage, two stage and three stage.

阶梯算法：因实际采集的因数和时间差存在较大误差和取均值同项因数存在较大不确定性，因此算法选择在合约端一次代码成型方面有较大难度，将通过设计分层算法和阶段式条件触发的方式解决。算法阶段：一阶段、二阶段和三阶段。

8. The first stage: Hyperledger triggers the first GAS fee distribution.

一阶段：超级账本触发首次 GAS 费分配。

8.1 Core indicators: 40% of the GAS account of the hyperledger collection address is cleared (core allocation + remaining average), and the first phase indicators and contract conclusion time are collected, that is, the signing time.

核心指标：超级账本归集地址 40%GAS 账户清零（核心分配+剩余均分），采集首期指标和合约缔结时间，即签约时间。

8.2 Core distribution algorithm:

A÷S÷B×E=V

Total Available for Distribution(A)÷Allocation Cycle(S)÷Number of Qualified Hyperledgers(B)×Hyperledger Service Cycle(E)=Allocation of Ledger(V)

核心分配算法：

A÷S÷B×E=V

可供分配总量 A÷分配周期 S÷合格超级账本数 B×超级账本服务周期 E=账本获配量 V

8.2.1 Total Available for Distribution(A): The accumulative amount of the GAS fee of the Hyperledger.
可供分配总量 **A**：超级账本 GAS 费累计额度。

8.2.2 Allocation Cycle(S): The first period of Hyperledger GAS fee distribution is the time period from the activation date of the first node of the Troy mainnet on December 2nd to the current Hyperledger GAS fee distribution date. The GAS fee distribution period for the second Hyperledger will be the time period from the last distribution to this distribution, measured in days.
分配周期 **S**：首期超级账本 GAS 费分配为 12 月 2 日 Troy 主网首节点激活日至本次超级账本 GAS 费分配日的时间周期。二次超级账本 GAS 费分配周期将为上次分配至本次分配的时间周期，以天计量。

8.2.3 Number of Qualified Hyperledgers(B)：After the Hyperledger contract is successfully signed, the server will deploy the miner`s ledger after it is online. It is displayed as a valid renewal node during the service period.
合格超级账本数 **B**：超级账本签约成功后，服务器布置上线后的矿工账本。在服务周期内显示为有效续费节点。

8.2.4 Hyperledger Service Cycle(E)：After the signing of the Hyperledger, the F.VOB - Technical Outreach Coordination Committee will start the deployment of the Hyperledger server. The minimum time for the deployment of the Hyperledger server is 8 days. The service period of the Hyperledger will be calculated from the completion of the Hyperledger server deployment to the date when the Hyperledger GAS fee is allocated.
超级账本服务周期 **E**：超级账本签约后，F.VOB 技术外联事务协调委员会将启动超级账本服务器布置，最低超级账本服务器布置时间为 8 天。超级账本服务周期将从超级账本服务器布置完成后至超级账本 GAS 费分配日计算。

8.2.5 Allocation of Ledger(V)：The allocated amount of the ledger refers to the total amount of AUC that can be received by the effective ledger participating in the allocation of this allocation. But what needs to be reminded is that the allocated amount of the ledger will contain two parts: the amount obtained under the total allocation formula plus the value that can be distributed evenly from the remaining total amount.
账本获配量 V：账本获配量指当前参与分配有效账本能接收到本次分配总额里的 AUC 总量，但需要提示的是，账本获配量里，将包含两个部分：总额分配公式下的获得量加上可供分配剩余总额平均分配下来的数值。

8.2.6 Remaining equalization: The remaining quota will be divided equally according to the effective number of contract ledgers.
剩余均分：剩余额度将按照合约有效账本数量参与均分。

9. The second stage: the secondary distribution is over-balanced.

二阶段：二次分配超配平衡。

9.1 Core indicators: Retain the one-stage algorithm, cancel the remaining averaging algorithm, and convert to a fixed remaining accumulation. The trigger condition conversion algorithm is: touching the GAS quota of 10,000 AUC, indexing the data for a single node state rotation, intervening in the time lock, and converting to the cyclic accumulation correction cycle.

核心指标：保留一阶段算法，取消剩余均分算法，转换为固定剩余累积。触发条件转换算法为：触及 GAS 额度 10000 枚 AUC，索引一次分配数据做单节点状态回旋，介入时间插锁，转换至循环累积的修正周期。

9.2 **Interpretation:** The algorithm cannot solve the huge difference of uncertain variables at one time, so a two-stage compensation design is made, but the matching factor can be obtained based on the actual distribution data of the first stage.

释义：算法无法一次性解决不确定变量的巨大差异，因此做二阶段补损设计，但需依据一阶段实际分配数据方能得出匹配因数。

9.3 The core of the two-stage solution:

二阶段解决核心：

9.3.1 Fixed amount allocation: 10000GAS.

固定量分配：10000GAS。

9.3.2 Time difference cancellation: the starting service period (all in the renewal period).

时间差取消：起始服务周期（均在续费期）。

9.3.3 The mean value remaining can be collected circularly: the remaining can be collected circularly to the 40% address of the Hyperledger.

均值剩余做到循环归集：剩余做到循环归集至 40%超级账本地址。

9.3.4 Over-allocation cover: After the account book is signed, there is a problem of correction of the gap between the actual payment cycle variables. Correction value: minimum 8 days-maximum 95 days. The first phase adopts the contract time as the service cycle lock-in factor, and the second phase will use the unique data determined by the actual distribution of the first phase, and use the smart contract to reverse the 1:1 calculation to carry out the renewal cycle and For the replenishment after the service period is locked, over-provisioned GAS will be aggregated to 40% of the Hyperledger address.

超配回补：账本签约后存在实缴费用周期变量差距修正的问题。修正值：最小 8 天-最大值 95 天，一阶段采取契约时间作为服务周期锁定要因，二阶段将根据实际一阶段分配确定的唯一数据，通过智能合约反推 1：1 核算，进行续费周期和服务周期锁定后的回补，超配 GAS 将归集至 40%超级账本地址。

9.3.5 Over-allocation replenishment cycle: 50% allocation for the second time, 50% allocation for the third time.

超配回补周期：二次分配 50%，三次分配 50 %。

9.4 Core data embedding: Over-Allocation Period (D)/Over-Allocation Amount (P).

核心数据嵌入：超配周期 D/超配数额 P。

9.5 Covering parameters:

Over-allocation Amount (P)=(Allocation of Ledger(V) - Remaining Mean Score (Y))÷Hyperledger Service Cycle(E)×Balance Period D

回补参数：

超配数额 P=（账本获配量 V-剩余均分值 Y）÷超级账本服务周期 E×差额周期 D

9.5.1 Over-Allocation Period (D): The difference period D is equal to the difference between the payment date and the contract date.

超配周期 D: 差额周期 D 等于缴费日和签约日差额。

9.5.2 Over-allocation Amount (P): That is, the amount involved in the account book over-receipt distribution in the next stage of meeting the online conditions.

超配数额 P：即满足在线条件下一阶段涉及账本超领取分配的数额。

9.5.3 Interpretation: Hyperledger's algorithm cannot take into account multiple variables in one-stage distribution, so the contract time is designed as the common divisor of all ledgers in stages. However, there is indeed a case of inconsistent payment cycles for contract performance. Considering that the actual payment is overdue due to the account book itself, which causes the deployment of nodes to be delayed and fails to effectively participate in the accounting and packaging of block data on the chain. Due to the lack of the service cycle caused by the renewal of the Hyperledger itself, the overpayment of the first-stage distribution will be compensated in the future distribution cycle, and the fair implementation of governance and the supplementary existence that cannot be taken into account in the first stage.

释义：超级账本在一阶段分配中算法无法兼顾多重变量，因此分阶段将签约时间作为所有账本的公约数设计。但确实存在签约履约缴费周期不一致的情况，考虑因账本自身原因导致实际缴费产生逾期造成布置节点时间顺延末尾，未能有效参与链上区块数据的记账打包工作的情况。因超级账本自身续费产生的服务周期缺失，在未来分配周期内将回补一阶段分配的超额领取，公平执行治理和一阶段无法兼顾的补充存在。

9.5.4 Remaining Mean Score (Y)：The remaining amount is considered as an equal share, and the first remaining amount is: 6985.479926 AUC. Amount of acquisition of a ledger: 39, the amount of single Hyperledgers obtained: 179.114869 AUC, the error value is 0.03%, and the average data is the value of the first batch of nodes, not included in the consideration of the amount of clawback.

剩余均分值 Y：剩余量作为均分考虑，首次剩余量为：6985.479926AUC。获配超级账本数量：39 个，一个账本获得量：179.114869AUC，误差值为 0.03%，均分数据为首批节点平分数值，不纳入回补数额考量。

9.5.6 Core algorithm：

10000 AUC÷Allocation Cycle(S)÷Number of Qualified Hyperledgers(B)×Hyperledger Service Cycle(E)-Over-allocation Amount (P)×50%=Allocation of Ledger(V)

核心算法：

10000 AUC÷分配周期 S÷合格超级账本数 B×超级账本服务周期 E-超配数额 P×50%=账本获配量 V

9.5.7 **Involving replenishment of accounts:** there is a contract but the renewal is not completed within the validity period, resulting in an indefinite postponement of the account. Stock: 8, replenishment amount: 8.

涉及回补账本：存在签约但未在有效期内完成续费导致无限期顺延账户，存量：8 个，回补量：8 个。

10. Three stages: quantitative design of advance and retreat differences.

三阶段：进退差异量化设计。

10.1 Core indicators: With the progress of the Hyperledger and the completion of the authorization conversion from the node, it smoothly entered the second phase of contract renewal. The short-term GAS fee increased sharply, and the number of daily transactions exceeded 1,000. The current average is calculated as: 1000÷2.64=378.7AUC/day.

核心指标：伴随超级账本的进展和授权转换从节点完成，顺利步入续约二阶段，短期 GAS 费激增，日交易笔数突破 1000，按目前均值计算为：1000÷2.64=378.7AUC/日。

10.2 Three-stage solution to the core:

三阶段解决核心：

10.2.1 Special indicators of governance mechanism embedded in Hyperledger: Hyperledger incentives, Hyperledger cycle points, Hyperledger distribution coefficient adjustment, Hyperledger punishment mechanism for evil, and Hyperledger node disconnection penalty mechanism.

嵌入超级账本的治理机制专项指标：超级账本激励、超级账本周期积分、超级账本分配系数调节、超级账本作恶惩罚机制和超级账本节点掉线惩罚机制。

10.2.2 Regarding the distribution of IDC's special link to the node distribution of the Hyperledger.

关于 IDC 分布专项挂钩超级账本的节点分布。

10.2.3 Core algorithm:

(10000-10000×Value (R))÷Allocation Cycle(S)÷Number of Qualified Hyperledgers(B)×Hyperledger Service Cycle(E)+Swap Hedge×Adjustment Factor=Allocation of Ledger(V)

核心算法：

（10000-10000×配值 R）÷分配周期 S÷合格超级账本数 B×超级账本服务周期 E+掉期套保×调节系数=账本获配量 V

Note: Part of the detailed information of the three stages will not be disclosed this time. Part of the content related to the design of the Hyperledger Governance Phase and the Hyperledger Allocation Agreement 2.0 version will also be more in line with the current design for the replacement of costs and benefits of special ledgers in the service cycle, etc., taking into account the first come, first served. The principle of the first to get the best.

说明：三阶段详细信息，部分不做本次披露。涉及超级账本治理阶段的设计和超级账本分配协议 2.0 版本的部分内容，也将针对专项账本在服务周期的成本和收益的替代比方案等将有更符合当前的设计，兼顾先来者先得，先得者利大的原则。

11. The formula and description of the two-stage over-allocation balance account:

涉及二阶段超配平衡账户的公式和说明：

11.1 Main body: Because the contracted Hyperledger has not completed the payment and deposit of the fees within the validity period of the contract, the arrangement period has been postponed.

主体：因签约的超级账本主体未在签约有效期内完成费用的缴存，导致布置周期限期顺延。

11.2 Reason: Due to the renewal, the contract failed to queue up in a timely and effective manner, and the deployment of the Hyperledger node server was delayed. In order to maximize the fairness of the authority and vested interests of the decentralized distributed node's hyperledger, if it fails to participate in the effective period of mining and accounting books, it will meet the over-allocation under the first-stage common divisor. The over-allocation amount will be covered in the second-stage algorithm, which can not only meet the current contract capacity and calculated error value, but also ensure the smooth progress of the data.

原因：因续费致使合约未能及时有效排队布局，超级账本节点服务器的延迟布置。为最大公平的体现去中心化分布节点的超级账本的权限和既得利益，未能参与有效周期出矿和记账账本，将满足在一阶段公约数下进行超配。超配数额将在二阶段算法中回补处理，既能满足现阶段的合约能力和计算的误差值，也能确保数据平稳推进。

11.3 Reminder: The payment time and renewal time data are the second-stage regulation values, and also include the newly signed Hyperledger.

提示：缴费时间和续费时间数据为二阶段的调控值，也包含新晋签约的超级账本。

11.4 Publicize relevant information:

公示相关信息：

Two-stage Over-Provisioning Balance Involves Hyperledger 二阶段超配平衡涉及超级账本				
Address	**Signing Time**	**Payment Time**	**One-Stage Service Cycle**	**Over-Provisioning Period (Day)**

			(Day)	
AUCttohq241of5a3CTjgnf3jBQQkhEoJ	2020.12.09	2020.12.17	175	8
AUC4oj1sa1vgrbozPfsCkmjDzpfCMq81	2020.12.10	2020.12.25	174	15
AUCucmtsux24v4u3DV11G4Artn4dnQUt	2020.12.10	2021.03.15	174	95
AUChl3mxl4s4efa2yHv5XbiJNqEc1GGG	2020.12.13	2020.12.30	171	17
AUCnbstywhkrxk435pPSSg4uF8u6apbm	2020.12.20	2021.03.15	164	85
AUCzidwc1531l133JytTE3NHjDTJZxEv	2020.12.30	2021.01.22	154	23
AUCpi51edfvm5lq3832Uvb25gajzHQ64	2021.01.03	2021.01.15	150	12
AUC5zmz4qowota421XtBzeD2X4Zqgaju	2021.02.05	2021.02.21	117	16
Amount Allocated for the First Stage of the Ledger (AUC)	**Mean Value**	**Allocation of Actual Ledger (AUC)**	**Over-Allocation Amount (AUC)**	
862.9359912	179.37771200	683.5582792	31.24837847	
859.0299439	179.37771200	679.6522319	58.59070964	
859.0299439	179.37771200	679.6522319	371.0744944	
847.3118019	179.37771200	667.9340899	66.40280426	
819.9694708	179.37771200	640.5917508	332.0140213	
780.9089977	179.37771200	601.5312857	89.83908811	
765.2848084	179.37771200	585.9070964	46.87256771	
636.3852472	179.37771200	457.0075352	62.49675695	
Note: The above involves the overdue extension of the Hyperledger contract time and the payment time, causing the actual service cycle to be inconsistent, and the design is embedded in a two-stage algorithm to solve it. 注意：以上涉及超级账本签约时间与缴费时间存在逾期顺延造成实际服务周期不相符，设计嵌入二阶段算法解决。				