# Directions for the Examination Procedures of Technology and Intellectual Property Value of the Industrial Cooperation Program
# 工業合作個案計畫技術與智財價值審議作業要點

I. Basis
一、 依據

Article 10 of the MND's "Regulations on Operating Industrial Cooperation" pursuant to letter Yuan-Fang No. 1100013559 issued by the Executive Yuan on May 13, 2021.
行政院 110 年 5 月 13 日院臺防字第 1100013559 號函核備國防部「工業合作作業規定」第 10 條。

II. Purpose
二、 目的

To ensure the reasonableness of costs and effects of "technology, certification, procurement, and marketing" introduced through industrial cooperation, these directions are hereby established to evaluate current technology ability and the necessity and value of technology (including certification, procurement, and international marketing) to be introduced based on the content of an industrial cooperation proposal.
為確保透過工業合作所引進之「技術、認證、採購、行銷」之成本效益合理性，依工業合作個案計畫書內容評估現有技術能力及待引進技術之必要性與其技術（含認證、採購、國際行銷）之價值，特訂定本作業要點。

III. Strategies
三、 策略

1. Evaluate current technology level and the necessity and value of technology (including certification, procurement, and international marketing) to be introduced, maturity of the technology market, cost benefit, and reasonable market cycle of technology introduced to lead the national defense technology of our country.

評估現有技術能力水準、與待引進技術（含認證、採購、國際行銷）之價值、技術市場成熟度，以及引進之成本效益與合理之市場生命週期，期提升我國國防科技水準。

2. To ensure the necessity of key technology introduced (including certification, procurement, and international marketing). In addition to establishing self-reliant national defense power, it may further urge the acquisition of national certification and ultimately achieve the goal of joining the international supply system of original manufacturers.
確保引進關鍵技術（含認證、採購、國際行銷）之必要性，除可建立國防自主能量外，並促使獲得國際驗證及認證，最終可融入原廠之國際供應體系為目的。

IV. Review Procedures
四、 審議作業

1. Industrial cooperation program:
工業合作個案計畫書之提出：

(1) A potential foreign supplier proposes the industrial cooperation program to the procurement project's responsible unit based on joint negotiate meetings, and the review and confirmation procedures are as follows:
國外潛在商源依聯合談判會議結論提出工業合作個案計畫書予國軍建案單位，審查確認程序如下：

A. Military recipients: After the receiving unit confirms the qualification (should be prior to the end of December in Y-3 year), the procurement project responsible unit shall then forward it to the Armaments Bureau.
屬軍方承接：經承接單位確認符合需求後（應於 Y-3 年當年度 12 月底前），由國軍建案單位轉送國防部軍備局。

B. Private recipient: The procurement project responsible unit shall forward the industrial cooperation program to the Armaments Bureau (C.C.

Industrial Development Bureau, IDB, of the MOEA) following IDB forward the program to local private recipient. After the receiving unit confirms the qualification (should be prior to the end of December in Y-3 year), the receiving unit shall reply to the IDB.
屬民間承接：工業合作個案計畫書函送國防部軍備局（副知經濟部工業局），由經濟部工業局轉承接單位確認是否符合需求（應於 Y-3 年當年度 12 月底前），續由承接單位回復經濟部工業局。

(2) The content of the industrial cooperation specific program shall include (but not - limited to) Technology Readiness Level (TRL) assessment (see Annex 1 for grade definition), technology life cycle, market value, foreign supplier investment and cost-benefit analysis.
工業合作個案計畫書之內容應包含（但不限於）技術備便水準（TRL）評估（分級定義表如附件 1）、技術生命週期、市場價值、外商投入成本與投資成本效益分析。

2. Task grouping of examination
審查之任務編組

(1) Technology and Intellectual Property Value Document Review Team (hereinafter referred to as" the Document Review Team"): The Armaments Bureau of the MND and the Industrial Development Bureau of the MOEA co-recommend 3 to 5 scholars and experts of intellectual property laws, patent attorneys, patent value analysts and experts specialized in technology related with the industrial cooperation program. Document Review Team will be responsible for the TRL assessment, technology life cycle, market value, foreign supplier investment and cost-benefit analysis (see Annex 2 for review table).
技術與智財價值書審組（以下簡稱書審組）：由國防部軍備局及經濟部工業局共同推薦智慧財產法律學者、專利或專利價值分析師、與工業合作個案內容屬性相關之技術領域學者專家共 3-5 員，編成書審組，負責工業合作個案計畫書中技術備便水準（TRL）評估、技術生命週期、市場價值、外商投入成本與投資成本效益分析審查（審查表如附件 2）。

(2) Technology and Intellectual Property Value Requirements Examine Meeting (hereinafter referred to as" the TIPV Requirements Examine Meeting"): The group consists of one each of an industrial officer of the MND and the MOEA, one representative of MND related General Staff Office (DCGS/Logistics【J4】, DCGS/Communication, Electronics and Information 【J6】), one representative of the National Science and Technology Council, one representative of National Chung Shan Institute of Science and Technology, one representative of the procurement project responsible unit, one or more scholars and experts specialized in technology (Document Review Team), and one or more IP patent attorneys or patent value analysts (Document Review Team), with a total of at least nine individuals (see Annex 3 for the review table).
技術與智財價值審議會議（以下簡稱審議會議）：委員由國防部與經濟部業管主管各 1 人、國防部相關聯參（後次室、通次室）代表 1 人、國科會代表 1 人、國家中山科學研究院代表 1 人、建案單位代表 1 人，技術領域學者專家（書審組）1 人以上，及智財專利師或專利價值分析專家（書審組）代表 1 人以上組成，合計至少 9 人（審查表如附件 3）。

(3) Recusal regulations: The review members shall hold fair, objective positions and an independent spirit in carrying out examination tasks. Where there is an event in which a member shall be recused, the recusal shall be managed in accordance with Articles 32 and 33 of the Administrative Procedure Act.
迴避規定：委員執行審查任務應秉持公正客觀之立場及超然獨立之精神，委員如有利害關係而應迴避之情形，準用行政程序法第 32 條及第 33 條之規定辦理迴避。

(4) Confidentiality: Except for legal regulations or just cause, the review members shall not disclose any content acknowledged from the project reviewed or opinions of other members to any third party.
保密要求：除法律規定或有正當事由外，審查委員不得對外洩漏因受理審議案件所知悉之內容及其他委員之審議意見。

3. Preparation Procedures for TIPV Requirements Examine Meeting
審議會議之前置作業

(1) The ICP specific project shall be sent to the members of the Document Review Team for a pre-screening of the following items 14 days prior to the TIPV Requirements Examine Meeting: Technology Readiness Level (TRL) assessment, technology life cycle, market value, foreign supplier investment and cost-benefit analysis.
技術與智財價值審議會議開會前 14 日，應先將工業合作個案計畫書送請書審組委員進行下列事項之預審：技術備便水準（TRL）評估、技術生命週期、市場價值、外商投入成本與投資成本效益分析。

(2) The ICP specific project and the pre-screening results in writing shall be sent to the members of the Examination Team for review 3 days prior to the TIPV Requirements Examine Meeting, in order to facilitate the convene of the meeting.
前項工業合作個案計畫書及書面之預審結果，應於技術與智財價值審議會議開會前 3 日送請審議會議委員審閱，俾利技術與智財價值審議會議召開。

4. Technology and Intellectual Property Value Requirements Examine Meeting
技術與智財價值審議會議

(1) The meeting shall be co-chaired by the relevant personnel from the Armaments Bureau and the Industrial Development Bureau, MOEA, as well as the members of the Review Team. The following are invited: representatives from MND related General Staff Office (DCGS/Logistics【J4】, DCGS/Communication, Electronics and Information【J6】), representatives from NSTC, representatives from National Chung-Shan Institute of Science & Technology, representative from the Procurement Project Responsible Unit, Experts specialized in technology and intellectual property law, patentee or patent value analysis expert (Document Review

Team). There shall be more than half of the total number of members and at least 3 experts in the field of technology in order to convene the meeting.
會議主席由國防部軍備局及經濟部工業局相關業務主管共同擔任，邀集委員計國防部相關聯參（後次室、通次室）代表、國科會代表、國家中山科學研究院代表、建案單位代表、技術領域學者專家及智慧財產法律學者、專利師或專利價值分析專家（書審組），總員額過半數以上，且技術領域之專家學者、專利師等至少需達 3 人以上始得開會。

(2) The potential domestic recipients and the demand unit may be invited to the meeting for inquiries or explanation as non-voters. The agenda of the meeting includes the report by organizers, presentation by the potential foreign suppliers, presentation by the potential domestic recipients or the demand unit, questions from the Reviewers, pre-screening results from the Document Review Team, and conclusion of the meeting.
會議得邀請承接單位／需求單位列席備詢或說明，會議議程包括承辦單位報告、國外潛在商源簡報、承接單位／需求單位簡報、審查委員提問、書審組之預審結果說明及會議結論等。

(3) The Reviewers should fill out the Technology and Intellectual Property Value Requirements Examine Meeting Comments Form (as ANNEX 3), which will be compiled by the organizers to complete the conclusion of the meeting so as to confirm that the content of the ICP specific project is in line with the resolution of the Joint negotiate meeting.
為確認工業合作個案內容符合聯合談判會議決議事項，審查委員需填寫技術與智財價值審議意見表（同附件 3），由承辦單位彙整後完成會議結論。

(4) The conclusion of the meeting shall be sent to the potential foreign suppliers of the proposal for written confirmation after the meeting, and the ICP specific project shall be revised as necessary. If the negotiation fails or no consensus is reached (the potential foreign suppliers of the proposal does not agree with the conclusion of the meeting), the proposal shall be returned to the joint negotiate meeting for further negotiation.

會議結論應於會議後另送交提案之國外潛在商源以書面確認同意，並視需要修訂工業合作個案計畫書；若審議不通過或未達成共識（提計劃案之國外潛在商源不同意會議結論），應在不更動工業合作項目內容之前提下退回聯合談判會議續行協商。

V. Principles for Examination

五、 審議原則

1. ICP specific project shall not include hardware equipment nor quotation. If the necessary basic infrastructure is included in the potential domestic recipients by the potential foreign suppliers, the potential domestic recipients should invest by its own rather than include this part in the quotation.
工業合作個案計畫書不得包含硬體設備，亦不得列計報價金額；若屬國外潛在商源納列國內承接單位必備之自有基礎能量，應由承接單位自行投資亦不列計入報價金額。

2. Conclusions for Project Proposal Value Examination:
個案計畫書價值審議結論：

(1) If the cost in the evaluation conclusion is higher than or equal to the quotation proposed by the potential foreign suppliers, the quotation proposed by the potential foreign suppliers shall be included in the resolution of the meeting;
評審結論高於或等於國外潛在商源提出之報價金額，則依國外潛在商源所提之報價金額，列入會議決議事項；

(2) If the cost in the evaluation conclusion is lower than the quotation yet the potential foreign suppliers agrees to the amendment, the conclusion shall be recorded in the agreed amended cooperation matters of the meeting;
評審結論低於報價金額，惟國外潛在商源同意修訂者，則列入會議同意配合修訂事項；

(3) If the cost in the evaluation conclusion is lower than the quotation and the potential foreign suppliers does not agree to the amendment, this cooperation will be returned to the Joint Negotiation Committee for further negotiation.
評審結論低於報價金額，且國外潛在商源不同意修訂者，則退回聯合談判會議續行協商。

3. Limits for negotiation and follow-up handling: In principle, continued negotiations shall not be conducted for more than 2 times. If a consensus cannot be reached within the prescribed time limit or after two continued negotiations, the Procurement Project Responsible Unit establishing the project shall send a letter to the Armaments Bureau to convene an Industrial Cooperation Requirements Examine Meeting to consider the industrial cooperation requirements.
次數限制及後續處理：續行協商以不超過 2 次為原則。倘無法於規定時限內或經續行協商 2 次仍未達成共識，國軍建案單位應函送國防部軍備局召開工業合作需求審議會審議。

VI. Supervision and Evaluation Section
六、 督導及管考

1. The Industrial Development Bureau, MOEA shall properly establish a management mechanism for the industrial cooperation performance and agree on the performance attribution and management responsibilities in the ICP specific project; in addition, the Industrial Development Bureau shall also supervise potential domestic recipients to properly establish a management mechanism for subsequent effectiveness evaluation and future defense-related R&D applications.
經濟部工業局應就工業合作成果妥善訂定管理機制，並於工業合作個案計畫書內約定成果歸屬及管理責任；此外，工業局應同時督導國內承接單位妥善訂定管理機制，以利後續成效管考及未來國防相關研發之應用。

2. The performance of the TIPV Requirements Examine Meeting shall be reported annually to the Industrial Cooperation Steering Committee (jointly established by MOEA and MND).
技術與價值審議會議執行成效，應每年提報於經濟部國防部工業合作政策指導會提報。

VII. These Guidelines will be promulgated and implemented upon approval by the Industrial Cooperation Steering Committee (jointly established by MOEA and MND); the same applies for any amendments thereafter.

七、 本要點經經濟部國防部工業合作政策指導會核定後公布施行；修訂時，亦同。

# Annex I - Definition Table of Technology Readiness Level of National Defense Technologies

| Technology Readiness Level (TRL) | Definition | Description |
|---|---|---|
| Technology Readiness Level 1 (TRL1) | Basic rationale have been observed, studied and reported | - The lowest level of technology readiness level.<br>- Start to transfer scientific research to applied research and development<br>- Such examples may include paper studies on the fundamental nature of technology. |
| Technology Readiness Level 2 (TRL2) | Technical concepts and applications have been explicitly illustrated | - Innovation starts.<br>- Be capable of innovation on practical application after mastering basic principles.<br>- Be capable of meditating on their applications without proving different hypothesis or put them into detailed analysis.<br>- Such examples are limited to analytical studies. |
| Technology Readiness Level 3 (TRL3) | Enabled to analyze and experiment/prove conceptual properties on key functions | - Start active research and development.<br>- Include analytical studies and laboratory studies and conduct physical confirmation on the analytical predictions of individual technical units.<br>- Such examples include components yet been integrated or not as the representative. |
| Technology Readiness Level 4 (TRL4) | Component/modules can be confirmed in test environment | - Basic technical components work smoothly after integration.<br>- Remains as a “low fidelity” compared with the final system.<br>–Such examples include hardware specifically integrated in a laboratory. |
| Technology Readiness Level 5 (TRL5) | Components/modules can be confirmed in the relevant environment | - The fidelity of sample technology significantly increased.<br>- Integrate basic technical components with the supportive units that are classified with proper realism, enabling it to make experiments in a simulative environment.<br>- Such examples include an integration of components in a laboratory with high degrees of fidelity. |
| Technology Readiness Level 6 (TRL6) | System/Subsystem Model can be displayed in the relevant environment | - Put a representative model or prototype (exceeded Technology Readiness Level 5) into tests in relevant environment<br>- Indicate a big step forward on the display readiness of technology.<br>- Such examples include tests on prototype in a laboratory or simulated battlefield with high fidelity. |
| Technology Readiness Level 7 (TRL7) | System prototypes can be presented in the relevant operational environment | - Prototypes are displayed in an almost planned battle system environment.<br>- Requirements include presentation of real system prototype on an aircraft, in a vehicle or space, indicating a significant step beyond technical preparatory level 6.<br>- Such examples include tests on prototypes in a test-based aircraft rig. |
| Technology Readiness Level 8 (TRL8) | Completed and qualified real systems can pass tests and be presented | - All technologies are proven to achieve the technology toward the ready-to-use level in final form and under expected conditions.<br>- Almost all cases of such levels of technology readiness indicate the final state of developing real system.<br>- Such examples include system development tests and evaluation for expected weapon system (gears/equipment) to determine whether meeting design specifications. |
| Technology Readiness Level 9 (TRL9) | Real systems have been proven to pass through battlefield missions | - Apply all means of technology to a reality in final form as a real system and under mission conditions, e.g., a variety of mission conditions faced in operational tests and evaluation.<br>- Such examples include this system being used under battle mission conditions. |

Reference: The “Tutorial Guideline for the Development of National Defense Science and Technology” issued by the Ministry of National Defense dated July 18, 2018, issuance No. 1080008892.

# 附件 1-國防科技技術備便水準分級定義表

| 技術備便水準（TRL） | 定　義 | 說　　明 |
|---|---|---|
| 技術備便水準第一級（TRL1） | 基礎原理已被觀察研究與報告 | -屬最低層次之技術備便水準。<br>-開始將科學研究移轉為應用研究及發展<br>-此類例子可包括對技術之基礎性質之紙上研究。 |
| 技術備便水準第二級（TRL2） | 技術概念與應用已被明確闡述 | -開始創新。<br>-能經由對基礎原理之瞭解後，對實務上的應用有所創新。<br>-得在未對各項假設加以證明或進行細部分析下，思索其應用。<br>-此類例子侷限於分析性的研究。 |
| 技術備便水準第三級（TRL3） | 對關鍵功能能進行分析與實驗／證明概念特性 | -開始進行主動性研究與發展。<br>-包括分析研究及實驗室研究，對個別的技術單元分析性預測進行實體性確認。<br>-此類例子包括未經整合或尚不具代表性的組件。 |
| 技術備便水準第四級（TRL4） | 組件/模組能在測試環境下確認 | -基礎的技術性組件經過整合後能夠順利運作。<br>-相對於最終的系統仍屬「低逼真度」。<br>-此類例子包括在實驗室環境下所特別整合的硬體。 |
| 技術備便水準第五級（TRL5） | 組件/模組能在相關環境下確認 | -樣件技術的逼真顯著增加。<br>-將基礎的技術組件予與具適度真實性的支援單位整合，使其可在於模擬的環境下作實驗。<br>-此類例子包括組件在高逼真度的實驗室下之整合。 |
| 技術備便水準第六級（TRL6） | 系統／分系統模型或原型能在相關環境下展示 | -將具有代表性的模型或原型（遠超過第5級技術備便水準） 在相關環境下試驗<br>-代表其在技術的展示備便性上跨出了一大步。<br>-此類例子包括在高逼真度的實驗室環境或模擬的作戰環境下對原型件之測試。 |
| 技術備便水準第七級（TRL7） | 系統原型能在相關作戰環境下展示 | -原型件在近乎於或規劃的作戰系統環境下展示。<br>-要求在例如飛機、載具、或太空等操作環境下進行真實系統原型件之展示，因此代表其已超越第6級技術備便水準一大步。<br>-此類例子包括在試驗用飛機台架中進行原型件的測試。 |
| 技術備便水準第八級（TRL8） | 已完工及合格的真實系統能通過測試與展示 | -所有技術均以其最終形式及在預期條件下，經證實能夠順利運作。<br>-幾乎在所有的情況下，此等級之技術備便水準代表真實系統發展之最終情形。<br>-此類例子包括對所預期武器系統（裝備）之系統研發測試與評估，以決定其是否符合設計規格。 |
| 技術備便水準第九級（TRL9） | 真實的系統已證實成功地通過作戰任務 | -以真實系統的最終形式及在任務條件下，實際應用所有技術，例如在作戰測試與評估中所遇到的各種任務條件。<br>-此類例子包括在作戰任務條件下使用此系統。 |

參考:國防部108年7月18日國備獲管字第1080008892號令頒「國防科技發展教則」

# Annex II - Comments of Document Review on the Technology and Intellectual Property Value behind Industrial Cooperation Program (ICP) Specific Project

ICP Name:
Potential foreign recipients:
Domestic recipients:

Date: / /

| Item No. | Reviewing Focus | Result | | Description |
|---|---|---|---|---|
| 1 | The result matches with the ICP based on the review of Technology Readiness Level (TRL) of the key items of technology transfer in the program. | □Yes | □No | |
| 2 | The result matches with the ICP based on the analysis of international spot market life cycle of the items of technology transfer in the program. | □Yes | □No | |
| 3 | The result matches with the ICP based on the investment costs (including foreign supplier and recipient) of the items of technology transfer in this program. | □Yes | □No | |
| 4 | Score on the cognitive level for and describe the research and analysis of market value of the items of technology transfer in this program. | (Percentage %)<br>□100<br>□95<br>□90<br>□85<br>□80<br>□75<br>□70<br>□Others_____<br>(e.g. 87, 92.5, 65) | | |
| General Advices | | | | |

Signature by the Document review committee: _____

# 附件 2-工業合作個案計畫技術與智財價值書審意見表

工業合作個案計畫名稱：

國外潛在工合承商：

國內工合承商：

日期：00 年 00 月 00 日

| 項次 | 評審要項 | 審查結果 | | 說明 |
|---|---|---|---|---|
| 一 | 本計畫關鍵技術移轉項目技術備便水準（TRL）評估，審查結果與計畫書所述相符。 | □是 | □否 | |
| 二 | 本計畫技術移轉項目之技術生命週期研析，審查結果與計畫書所述相符。 | □是 | □否 | |
| 三 | 本計畫書投入成本(含外商與我方)，審查結果與計畫書所述相符。 | □是 | □否 | |
| 四 | 本計畫書效益分析，審查結果與計畫書所述相符。 | □是 | □否 | |
| 五 | 針對本計畫書價值研析，進行認同度評分與說明。 | (百分比%)<br>□100<br>□ 95<br>□ 90<br>□ 85<br>□ 80<br>□ 75<br>□ 70<br>□ 其他____<br>(若非上述百分比，如 87、65 等，請勾選其他) | | |
| 綜合建議 | | | | |

書審委員簽名：_____

# Appendix III - Comments of Review on the Technology and Intellectual Property Value behind Industrial Cooperation Program (ICP) Specific Project

ICP Name:
Potential foreign recipients:
Domestic recipients:

Date: / /

| Item No. | Reviewing Focus | Result | | Remark |
|---|---|---|---|---|
| 1 | The specific project conforms to the "Summary description of the ICP Specific Project", including project summary, scope, content, schedule, deliverables and other focuses. | □Yes | □No | |
| 2 | The specific project includes evaluation on Technology Readiness Level (TRL) for the transfer of key technologies, and the results are conforms to the current state of domestic technology energy. | □Yes | □No | |
| 3 | The specific project includes research and analysis on the international spot market life cycle for weapons and equipment, and results are conforms to our actual needs. | □Yes | □No | |
| 4 | The specific project includes efficiency research and analysis on technical market value, and results are conforms to our actual needs. | □Yes | □No | |
| 5 | The specific project includes the efficiency analysis of costs invested in software and hardware, and results are conforms to our actual needs. | □Yes | □No | |
| 6 | The specific project includes other transfer of technologies or deliverables that benefit to us in practical manner. | □Yes | □No | |
| 7 | The specific project includes international certification and international purchase orders where we were included in the original supply chain. | □Yes | □No | |
| 8 | Agreed to the industrial cooperation the ICP specific project proposed by potential foreign suppliers. | □Yes | □No | |
| General advice | | | | |

Signature by the review committee: _____

# 附件 3-工業合作個案計畫技術與智財價值審議意見表

工業合作個案計畫名稱：

國外潛在工合承商：

國內工合承商：

日期：00 年 00 月 00 日

| 項次 | 評審要項 | 請勾選 | | 備註 |
|---|---|---|---|---|
| 一 | 個案計畫符合「工業合作個案執行規劃摘要表(Summary description of the ICP Specific Project)」計畫摘要、範疇、內容、期程、交付項目等要項。 | □是 | □否 | |
| 二 | 個案計畫內容含括關鍵技術移轉之技術備便水準（TRL）評估，評估結果符合國內技術能量現況。 | □是 | □否 | |
| 三 | 個案計畫內容含括關鍵技術移轉之生命週期研析，評估結果符合我方實際需求。 | □是 | □否 | |
| 四 | 個案計畫內容含括技術市場價值研析，評估結果符合我方實際需求。 | □是 | □否 | |
| 五 | 個案計畫內容含括軟、硬體投資成本效益分析，研析結果符合我方實際需求。 | □是 | □否 | |
| 六 | 個案計畫內容含括其他對我方具有實際助益之技術移轉或交付品項。 | □是 | □否 | |
| 七 | 個案計畫內容含括將我方納入原廠供應鏈之國際認證與國際採購訂單。 | □是 | □否 | |
| 八 | 同意國外潛在工合承商提出之工合個案計畫。 | □是 | □否 | |
| 綜合建議 | | | | |

審議委員簽名：_____