

# TRIZ 词汇与 TRIZ 相关术语表（上）

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原文作者：Valeri Souchkov

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初翻：刘超 博士 (MATRIZ 3 级) 校对：刘东 先生 (MATRIZ 3 级)

总校正：黄免衢 博士 (MATRIZ 4 级)

策划推广：韩楠 女士 (MATRIZ 3 级)

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按照 MATRIZ CEM 主席 Dr. Ikovneko Sergei 要求，我们欢迎 TRIZ 同好提供意见。

TRIZ 词汇与 TRIZ 相关术语表适用于从事与发明性问题（文后简称发明问题）解决理论（TRIZ）相关的应用人员、开发人员、研究人员、科学家、教师和学生。

当前版本的术语表包括 396 个术语的描述，这些术语在 TRIZ 出版物中被反复使用。术语表是在经典 TRIZ 和现在 TRIZ 的术语基础上编制的。词汇表既包括独特的 TRIZ 术语，也包括在 TRIZ 的特定背景下使用的常用术语。在编纂术语表时，使用了多种来源的资料，这些资料在下一页列出。

大多数术语的定义是原创的，以提供简洁的结构和整个术语表的一致性。定义是直接由英文给出的。一些相对较新的 TRIZ 术语虽然没有俄文原版翻译，或还未定义，但本术语表也提供了它们的定义。

术语表以表格形式提供，其中包括以下字段：

- **术语**：TRIZ 特有的术语，或在 TRIZ 的特定情境下使用的常见术语。
- **释义**：术语的定义或解释说明。

- **示例**：在某些情况下，为了更好地理解某个术语的含义，提供了一些例子。
- **说明**：在某些情况下，提供了与一个术语相关的额外说明或若干相关说明。
- **术语最频繁使用的范畴**：一个领域或一个 TRIZ 技术方法（或：一系列领域或 TRIZ 技术方法），某术语对其是必不可少的。
- **俄语术语**：术语的原始的俄罗斯语版本（由于版面有限，俄语术语未在本文中列出。如有需要，请前往 MATRIZ 官方网站从英文原版术语表中获取）。
- **缩写**：常用的术语缩写（由于版面有限，合并入术语字段下）。
- **同义词或其他翻译**：在许多情况下，在 TRIZ 相关出版物中使用的同一个术语可能有几个同义词，或同一俄语术语可能被翻译成几种不同的表述。这类的多个术语（例如“技术矛盾”和“工程矛盾”）仍广泛使用，它们被列为单独的术语，并交叉引用。

MATRIZ 的术语表将定期更新，而对应的中文翻译亦会持续优化。有关 MATRIZ 术语原文，请联系 Valeri Souchkov 以获取意见和建议: [valeri@xtriz.com](mailto:valeri@xtriz.com)。

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TRIZ 词汇与 TRIZ 相关术语表中文翻译 1.2.1 版欢迎 TRIZ 同好提供意见，请联系 MATRIZ 中国副总裁韩楠，以获取意见和建议: [claire\\_han@matrizchina.cn](mailto:claire_han@matrizchina.cn)。

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序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
1	40 个发明原理 40 Inventive Principles	由 TRIZ 创始人 G. Altshuller 根据对众多发明的广泛研究开发的 40 个发明原理的集合。40 个发明原理可与矛盾矩阵（又称作 Altshuller 矩阵）结合使用，也可以单独使用。 A collection of 40 Inventive Principles developed by the founder of TRIZ G. Altshuller on the basis of extensive studies of information on numerous inventions. The 40 Inventive Principles can be used in combination with the Contradiction Matrix (also known as Altshuller Matrix) or independently.		尽管人们普遍声称，为了制定 40 个发明原理，大约审查了 40,000 项专利和专利证书，但没有关于 G. Altshuller 这一说法的已知证明。 Although it is widely claimed that approximately 40,000 patents and patent certificates were examined to develop 40 Inventive Principles, there is no known reference to the proof of this statement made by G. Altshuller.	TRIZ 工具 TRIZ Tools	
2	76 个标准解 76 Standard Solutions	参见发明标准解系统 see System of Inventive Standards			TRIZ 工具, TRIZ 知识库, 标准解 TRIZ Tools, TRIZ Knowledge Bases, Inventive Standards	
3	抽象术语 Abstract Term	描述一般的特性、属性或功能的术语（字词或短语），通过添加相关的上下文可以将其具体化为若干或更多的具体术语。具体术语和抽象术语之间没有严格的分界线。 A term (word or phrase) which describes a generic feature, property or a function that can be instantiated to a number or more specific terms by adding relevant context. There is no strict dividing line between specific and abstract terms.	术语 "分离" 可以被认为是抽象的，而术语 "切开" 是具体的。 The term "separate" can be considered as abstract while the term "to cut through" is specific.		TRIZ 通述, ARIZ General TRIZ, ARIZ	
4	附加功能 Additional Function	不是直接支撑主要过程的功能，但此功能会伴随着主要功能或帮助实现主要功能。			功能分析与建模 Function Analysis	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		A function that is not directly necessary to provide main process but which accompanies a main function or helps to achieve it.			and Modeling	
5	额外的发明原理 Additional Inventive Principle	若干发明原理在第一批 40 个发明原理完成后亦已被确认。目前有额外已知的 10 个发明原理。 A number of Inventive Principles which were identified after the first collection of 40 Inventive Principles had been completed. Currently there are 10 additional Inventive Principles known.		额外的发明原理用于不同版本的矛盾矩阵。 Additional Inventive Principles are used in different versions of the Contradiction Matrix.	TRIZ 工具 TRIZ Tools	
6	管理矛盾 Administrative Contradiction	在既没有解决问题的方法也没有现成的解决方案的情况下，对于负面（不希望的）效果描述或必须创造新事物的描述。 A description of either a negative (undesired) effect or a necessity to create something new in a situation when neither a problem solving method nor ready to use solution is available.		虽然管理矛盾可能看起来不是矛盾，因为它不是参数或要求之间的冲突，但它表明实现预期目标的必要性与可行方法之间存在的冲突 Although an administrative contradiction might not look as a contradiction since it misses a conflict between parameters or requirements, it indicates a conflict between the necessity to achieve the desired goal and available means to do it.	TRIZ 通述 General TRIZ	表面矛盾 Surface Contradiction
7	发明问题解决算法 Algorithm of Inventive Problem Solving	TRIZ 的核心分析工具（ARIZ 是俄语的缩写）。它的基础是一系列有逻辑的程序，用于分析模糊或不明确的初始问题/情况，并将其转化为清晰的系统冲突。对系统冲突的思考产生物理矛盾的构建，而在借助于分离		1) ARIZ 是俄语术语“Алгоритм Решения Изобретательских Задач (Algorithm Resheniya Izobretatelskyh Zadach)”的拉丁文缩写	TRIZ 工具 TRIZ Tools	1) 解决发明问题的算法 2) 俄语的旧译本可缩写为 AIPS 或 ASIP

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		<p>原理及通过最大限度地利用所属系统的资源，物理矛盾可被消除。ARIZ 是由 TRIZ 最基本的概念和方法组成的一个系统，如理想技术系统（理想系统）、系统冲突、物理矛盾、物场分析、标准解和技术系统进化趋势。该技术包括一些心理和系统算子，以支持其程序。</p> <p>The central analytical tool of TRIZ (ARIZ is a Russian abbreviation). Its basis is a sequence of logical procedures to analyze a vague or ill-defined initial problem/situation and transform it into a distinct system conflict. Consideration of the system conflict leads to the formulation of a physical contradiction whose elimination is provided with the help of the separation principles, and by the maximal utilization of the resources of the subject system. ARIZ is a system of the most fundamental concepts and methods of TRIZ, such as ideal technical system (ideal system), system conflict, physical contradiction, the Su-Field analysis, the Inventive Standards and the Laws of Technical Systems Evolution. The technique includes a number of psychological and systemic operators to support its procedures.</p>		<p>2) ARIZ 的最新官方认可版本是 ARIZ-85C (АРИЗ-85В)</p> <p>3) 不同的 TRIZ 机构提出了 ARIZ 的更新版本，但尚未正式批准</p> <p>1) ARIZ is the acronym abbreviated from Russian term "Алгоритм Решения Изобретательских Задач (Algorithm Reshenya Izobretatelskyh Zadach)" written in Latin letters.</p> <p>2) The latest officially accepted version of ARIZ is ARIZ-85C (or АРИЗ-85В in Russian).</p> <p>3) There are later versions of ARIZ proposed by different TRIZ Schools but they have not been formally approved yet.</p>		
8	替代技术系统 Alternative Technical System	<p>一种特定类型的竞争技术系统，相对于给定的技术系统具有互补的优点和缺点。</p> <p>A particular type of a competing technical</p>			特性传递 Feature Transfer	竞争技术系统 Competing Technical System



序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		system that has a complementary pair of advantages and disadvantages with respect to a technical system given.				
9	阿奇舒勒矩阵 Altshuller Matrix	由 TRIZ 创始人 G. Altshuller 最初开发的矛盾矩阵（见矛盾矩阵）。 The first version of the Contradiction Matrix developed by G. Altshuller, the founder of TRIZ (see Contradiction Matrix)			TRIZ 工具 TRIZ Tools	
10	类似问题 Analogous Problem	通常为在不同技术领域的发明问题，与给定的发明问题具有相同的抽象的问题模型（矛盾，或物场模型，或功能）。 An inventive problem, usually in a different technology area, that has the same abstract problem model (a contradiction, or a Su-Field model, or a function) as an inventive problem given.			TRIZ 通述, ARIZ General TRIZ, ARIZ	
11	类似解决方案 Analogous Solution	通过使用与其他解决方案相同的问题解决方法，解决相同类型的物理矛盾而获得的发明性的解决方案。 An inventive solution that was obtained by resolving the same type of a physical contradiction with the use of the same problem solving method as some other solution.		类似问题不仅可以通过解决相同的物理矛盾来定义，还可以通过具有相同的物场模型或相同的功能来定义。 Analogous problems might be defined not only through a resolving the same physical contradiction but by having the same SuField model or the same function.	TRIZ 通述, ARIZ General TRIZ, ARIZ	
12	预测性失效确定 Anticipatory Failure Determination	用于识别由技术系统引起的系统内或超系统中的潜在问题和失效的方法和技术。 预测性失效分析包括两种策略：1) AFD 失			TRIZ 工具 TRIZ Tools	



序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		效分析揭示负面或不希望的结果的原因 (见转移分析); 2) AFD 预测分析, 侧重于预测潜在负面或不希望的结果。 A method and a technique for identification of potential problems and failures either within a technical system or in its supersystem caused by the technical system. Anticipatory Failure Analysis includes two strategies: 1) AFD Failure Analysis to reveal causes of a negative or undesired effect (see Diversion Analysis), and 2) AFD Prediction Analysis which focuses on predicting potential negative or undesired effects.				
13	反功能 Anti-Function	与给定功能相反的功能。 A function which is opposite to a function given.	加速 vs 减速 "To accelerate" vs. "to decelerate"		TRIZ 工具 TRIZ Tools	
14	反原理 Anti-Principle	包含与已知的某个发明原理中给出的建议相反的问题解决建议的发明原理。 An Inventive Principle that contains a problem solving recommendation opposite to a recommendation given in one of the known Inventive Principles known.	“抽取”可以被视为“合并”的反原理 "Principle of Taking Away" can be considered as antiprinciple with respect to the "Principle of Merging".			
15	反过程 Anti-Process	具有与给定过程的相反方向的过程。 A process which has its direction opposite to a process given.	冷却 vs 加热, 或装配 vs 拆卸 "Cooling" vs. "heating", or	使用“反过程”有助于构建物理矛盾。 The use of "anti-process" helps to formulate physical contradictions.	TRIZ 通述 General TRIZ	相反过程 Opposite Process

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
			"assembly" vs. "disassembly".			
16	反系统 Anti-System	主要有用功能与给定技术系统的某个功能相反的技术系统。 A technical system whose main useful function is opposite to a function of the technical system given.	冷却器 vs 加热器 A cooler vs. a heater.	在一些参考文献中，“反系统”用于描述给定系统竞争的系统 In some references, the term "anti-system" is used to describe a system which is competitive to a system given.	TRIZ 通述, 多屏思维法, 思维图 General TRIZ, MultiScreen Diagram of Thinking	
17	属性 Attribute	实体的基本性质, 其描述与其他实体的相互作用。一个属性总是可以与一个值关联起来, 这个值可以是线性的、非线性的或离散的。一个参数是一个属性的子集。 A fundamental quality of a material object that characterizes its interaction with other material objects. An attribute can always be associated with a value which can be either linear, non-linear, or discrete. A parameter is a subset of an attribute.	1) 颜色, 2) 重量, 3) 复杂度, 4) 相态 1) Color, 2) Weight, 3) Complexity, 4) Phase state	示例包括电导率、粘度或强度 Examples include electrical conductivity, viscosity, or strength.	TRIZ 通述, 功能分析 General TRIZ, Function Analysis	
18	辅助功能 Auxiliary Function	作用于一个组件的有用的功能, 该组件可以作为一个子系统或一个更高系统级别的组件。 A useful function provided with respect to a component which can be considered as a subsystem or a component of a higher system level.			功能分析与建模 Function Analysis and Modeling	
19	基础技术系统 Base Technical System	从替代系统中进行特性转移的系统。基础系统是从两个替代系统中择一者, 其目的是为了改进。 A system to which features from the alternative system are transferred. The base			特性传递 Feature Transfer	

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		system is one of the two alternative systems selected for improvement.				
20	基本功能 Basic Function	作用于被分析的技术系统的目标对象的有用功能。 A useful function directed toward a target object of a technical system being analyzed.			功能分析与建模 Function Analysis and Modeling	1) 主要功能 Main function, 2) 首要功能 Primary function
21	Basic Principle 基本原理	见作用机理 see Operational Principle			TRIZ 通述, 科学效应库, 技术系统进化趋势 General TRIZ, Catalogues to Effects, Trends of Technical Systems Evolution	
22	钟形曲线进化 Bell-Curve of Evolution	形状如钟的曲线, 其描绘了和技术系统进化过程中为支撑主要价值参数或技术系统的主要有用功能实现而所需的资源成本与时间之间的非线性关系, 包括两个阶段: 扩张 (增长) 和卷积 (减少)。 A curve shaped as a bell depicting a nonlinear relation between costs of resources required to provide the main parameter of value or delivery of a main useful function of a technical system and time during evolution of the technical system. The Bell-Curve of evolution includes two phases: Expansion (growth) and Convolution (reduction).			TRIZ 技术进化模型 TRIZ Models of Technology Evolution	
23	生物科学效应 Biological Effect	由生物 (动物, 微生物, 昆虫, 植物) 或其组合产生的科学效应, 其可用于解决发明问	为了从环境中提取某种物质, 可以使		科学效应库 Catalogues of	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		题。 An effect produced by a biological object (animal, microbe, insect, plant) or combination of such that could be used for inventive problem solving.	用能在代谢过程中积累这种物质的生物，然后从其中提取物质。 To extract a certain substance from environment, a biological object can be used which can accumulate such a substance during metabolic process and then the substance can be extracted from the biological object.		Effects	
24	双系统 Bi-System	一个包含两个组件的技术系统，而此两组件具有完全相同、相异，或相反的功能或属性值，以产生有正向的协同效应：如显著增强或者弱化某属性值、或产生新特性，或提供新功能。除上述两个组件的情形外，若两个完整的技术系统能够产生协同效应，则它们亦可构成双系统。 A technical system which includes two components with identical, biased, or inverse functions or values of the same attribute to create a positive synergetic effect: either a considerable multiplication or decrease of a value of an attribute, or delivering a new			技术系统进化趋势 Trends of Technical Systems Evolution	

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		property, or production of a new function. In addition to two components, two complete technical systems can form a bi-system as well in case if they produce synergetic effect.				
25	参数异质的双系统 Bi-System with Biased Parameters	<p>一个包含两个组件的技术系统, 而此两组件具有完全相异的功能或属性值, 以产生有正向的协同效应: 如显著增强或者弱化某属性值、或产生新特性, 或提供新功能。若两个具相异参数的完整技术系统能够产生协同效应, 则它们可构成双系统。</p> <p>A technical system which includes two components with biased functions or values of the same attribute to create a positive synergetic effect: either a considerable multiplication or decrease of a value of an attribute, or delivering a new property, or production of a new function. Two complete technical systems with biased parameters can form a bi-system in case if they produce synergetic effect.</p>	<p>1) 电开关, 由两个具有不同热膨胀系数的金属板组成。</p> <p>2) 也可以由脚踏板驱动的电动自行车。</p> <p>1) An electric switch which consists of two metal plates with different coefficients of thermal expansion.</p> <p>2) An electric bicycle that can also be driven by pedals.</p>		技术系统进化趋势 Trends of Technical Systems Evolution	相似参数的双系统 Bi-system with similar parameters
26	参数同质的双系统 Bi-system with Identical Parameters	<p>一个包含两个组件的技术系统, 而此两组件具有完全相同的功能或属性值, 以产生有正向的协同效应: 如显著增强或者弱化某属性值、或产生新特性, 或提供新功能。若两个相同的完整技术系统能够产生协同效应, 则它们可构成双系统。</p> <p>A technical system which includes two components with identical functions or values of the same attribute to create a positive</p>	<p>1) 由两个透镜组成的眼镜提供立体视觉。 2) 由两艘相同的船组成的双体船提供了单船无法实现的搭乘稳定性。</p> <p>1) Spectacles consisting of two</p>		技术系统进化趋势 Trends of Technical Systems Evolution	同质双系统 Homogenous bi-system

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		synergetic effect: either a considerable multiplication or decrease of a value of an attribute, or delivering a new property, or production of a new function. Two identical complete technical systems can form a bi-system as well in case if they produce synergetic effect.	lens provide stereoscopic vision. 2) A catamaran consisting of two identical boats provides stability of the ride unachievable by a single boat.			
27	参数反质的双系统 Bi-system with Inverse Parameters	<p>一个包含两个组件的技术系统，而此两组件具有相反的功能或属性值，以产生有正向的协同效应：如显著增强或者弱化某属性值、或产生新特性，或提供新功能。</p> <p>若两个相反功能的完整技术系统（即反系统）能够产生协同效应，则它们可构成双系统。</p> <p>A technical system which includes two components with inverse functions or values of the same attribute to create a positive synergetic effect: either a considerable multiplication or decrease of a value of an attribute, or delivering a new property, or production of a new function. Two complete technical systems with inverse functions (anti-systems) can form a bi-system as well in case if they produce synergetic effect.</p>	<p>1) 一个铅笔端附着橡皮。</p> <p>2) 一个由制冷器与加热器组成的空调。</p> <p>1) A pencil with an attached rubber.</p> <p>2) An air conditioner consists of a refrigerator and a heater.</p>		技术系统进化趋势 Trends of Technical Systems Evolution	反质双系统 Inverse bi-system
28	科学效应库 Catalogue of Effects	由科学原理而来的科学效应的数据库，其根据通过具体科学效应的基础上可获得的通用技术功能而建立体系和分类。在每个库			TRIZ 工具 TRIZ Tools	

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		<p>中，科学效应被分为不同的组别，其中包括可提供通用技术功能的科学效应。目前已有下列科学效应库的类别：1) 物理科学效应库，2) 化学科学效应库，3) 几何科学效应库，4) 生物科学效应库。</p> <p>A database of scientific effects from a scientific discipline in which the effects are structured and categorized according to generic technical functions that can be obtained on the basis of specific scientific effects. In each Catalogue, the effects are combined to different groups which include those effects that can deliver a generic technical function. The following Catalogues of Scientific Effects are known: 1) Catalogue of Physical Effects, 2) Catalogue of Chemical Effects, 3) Catalogue of Geometric Effects, 4) Catalogue of Biological Effects.</p>				
29	原因缺点 Cause Disadvantage	<p>其是因果链中某一缺点的直接原因的缺点。</p> <p>A disadvantage in the Cause-Effect Chain that is a direct cause of a given disadvantage.</p>			因果链分析 Cause-Effect Chain Analysis	
30	因果链 Cause-Effect Chain	<p>用于被分析的技术系统的一种图形化模型，其排布导致缺点的原因。</p> <p>A graphical model of a technical system being analyzed which maps causes which lead to its disadvantage(s).</p>			因果链分析 Cause-Effect Chain Analysis	
31	因果链分析 Cause-Effect Chains Analysis (CECA)	<p>一种识别被分析的技术系统的关键缺点的分析工具。这是通过建立缺点的因果链来实现的，该因果链关联目标缺点与其基本原</p>			TRIZ 工具 TRIZ Tools	



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		<p>因。</p> <p>An analytical tool that identifies the Key Disadvantages of the analyzed Technical system. This is accomplished by building cause-effect chains of disadvantages that link the Target Disadvantage to its fundamental causes.</p>				
32	链式物场模型 Chain Su-Field	<p>包含至少两个物场模型的组合, 其中一个物场模型中的物质受制于另一个物场模型。</p> <p>A combination of at least two su-fields where a substance of one of the su-fields is controlled by another su-field.</p>			物场分析, 标准解 Substance-Field Analysis, Inventive Standards	
33	化学科学效应 Chemical Effect	<p>在化学科学中已知的自然现象或此种现象的组合, 可通过运用分子层级的所需变化, 而解决发明的问题。</p> <p>A natural phenomenon known in science of chemistry or combination of such that could be used for inventive problem solving by providing a change required at molecular level.</p>	<p>为了从环境中提取某些类型的物质, 可以使用电解化学反应</p> <p>To extract certain types of substances from environment, electrolytic chemical reaction can be used.</p>		TRIZ 工具, TRIZ 知识库 TRIZ Tools, TRIZ Knowledge Bases	
34	古典 TRIZ Classical TRIZ	<p>主要由 TRIZ 创始人 G.Altshuller 开发, 或在他的指导或协助下开发的 TRIZ 理论和实用工具的集合。</p> <p>A collection of TRIZ theoretical postulates and practical tools primarily developed by the founder of TRIZ G. Altshuller or either under his guidance or with his assistance.</p>			TRIZ 通述 General TRIZ	

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35	克隆问题 Clone Problems	具有相同物理矛盾的不同发明问题。 Different inventive problems that have identical physical contradictions.			TRIZ 通述, ARIZ General TRIZ, ARIZ	
36	竞争技术系统 Competitive Technical System	提供与被分析的技术系统相同的技术功能, 但与被分析的技术系统略有不同或根本不同的一种技术系统。竞争技术系统的概念与替代技术系统的概念类似。 A technical system that provides the same technical function as a technical system being analyzed but differs either slightly or radically from the technical system being analyzed. The concept of a competitive technical system is similar to the concept of alternative technical system.	汽车和自行车都是用来运送乘客或货物的 Both a car and a bicycle are used to transport a passenger or a cargo.		TRIZ 通述 General TRIZ	竞争技术系统 Competing Technical system
37	完备技术系统 Complete Technical System	根据技术系统完备性趋势, 一个技术系统包括至少四个组件 (子系统), 即: 能量单元, 传输单元, 控制单元, 和执行单元。 A technical system that according to the Trend of Technical System Completeness, includes at least four components (subsystems) which provide functions of Engine, Transmission, Control Unit, and Working Unit.			技术系统进化趋势 Trends of Technical Systems Evolution	
38	完整物场模型 Complete Su-Field	为了构建一个工作的技术系统或子系统, 用至少有两个物质和一个场的物场分析来表示代表着问题模型或问题解决方案模型的物场模型。 A Su-Field which represents a model of a problem or a solution to the problem expressed in terms of Su-Field Analysis in			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	

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		which at least two substances and a field are present to create a working technical system or a subsystem.				
39	物场模型的完整性 Completion of a Su-Field	最小技术系统的合成, 其模型包括至少两个物质组件和一个场, 该场提供两个物质组件之间的相互作用 (完整物场模型)。 Synthesis of a minimal technical system whose model includes at least, two substance components and a field that provides interaction between the two substance components (complete Su-field).			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
40	复合物场模型 Complex Su-Field	其为完整物场模型, 而其含有可提供解决发明问题所需条件的额外物质或场及额外相互作用。 A complete Su-Field with extra substance or field components and extra interactions that provide conditions necessary for solving an inventive problem.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
41	组件 Component	构成技术系统或其超系统的一部分的实体 (物质、场, 或物质和场组合)。一个组件可以代表单一对象或一组对象。 A material object (substance, field, or substance-field combination) that constitutes a part of a technical system or its supersystem. A component might represent both a single object and a group of objects.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
42	组件分析 Component Analysis	功能分析中的一个步骤, 用于识别被分析的技术系统及其超系统的组件。 A step in Function Analysis that identifies			功能分析与建模 Function Analysis and Modeling	组件与结构分析 Component and Structural

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		components of a technical system being analyzed and its supersystem.				Analysis
43	组件成本 Component Cost	组件的货币成本。成本可以是相对的或绝对的。 The monetary cost of the component. Cost can be relative or absolute.			功能分析与建模 Function Analysis and Modeling	
44	组件功能性 Component Functionality	组件所产生的一系列贡献于系统总体功能性的动作。 A range of operations produced by a component to contribute to the overall functionality of a system.			功能分析与建模 Function Analysis and Modeling	
45	组件模型 Component Model	功能分析中的技术系统及其超系统的模型, 其由功能载体和功能对象组成。 A model of a technical system and its supersystem in Function Analysis which consists of function carriers and objects of functions.			功能分析与建模 Function Analysis and Modeling	
46	目标组件 Target Component	被分析的技术系统的主要功能对象。 An object of the main function of a technical system being analyzed.			功能分析与建模 Function Analysis and Modeling	
47	综合卡索引 Composite Card Index	在特定 TRIZ 开发项目中, 从事特定研究或开发的主题而于过程中所收集的文件和示例库。 A bank of documents and examples collected during the process of working on a specific research or development topic within a particular TRIZ development project.			TRIZ 通述 General TRIZ	
48	垂直流动概念 Concept of Vertical	其为从事技术创造的人逐步提升目标和任务的策略, 而定义了富有创造力者一生中的			创造性个体发展理论	

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	Mobility	三个演变阶段：1) 解决狭窄领域的具体工程问题；2) 解决大规模的工程或科学问题；3) 借助于突破性的创新解决方案解决大规模的社会问题。 A strategy of stepwise upgrade of goals and tasks by a person dealing with technical creativity which defines three phases of evolution during the creative person's lifetime: 1) Solving specific engineering problems in a narrow area, 2) Solving largescale engineering or scientific problems, 3) Solving large-scale social problems with the help of breakthrough innovative solutions.			Theory of Creative Individual Development	
49	概念方向 Conceptual Direction	在解决关键问题的基础上实现项目目标的具体方式。 A specific method to achieve the project goals based on solving of a key problem.			TRIZ 通述 General TRIZ	
50	概念子方向 Conceptual Sub-direction	在概念方向的框架内解决关键问题的具体方式。 A specific method of solving a key problem within the frame of the conceptual direction.			TRIZ 通述 General TRIZ	
51	冲突 Conflict	见矛盾 (Contradiction)。 see Contradiction.		TRIZ 中的 "冲突" 一词经常被用来表述物理矛盾。 The term "conflict" in TRIZ is often used to present a physical contradiction.	TRIZ 通述 General TRIZ	矛盾 Contradiction
52	冲突解决 Conflict Resolution	一种对于发明问题的解决方案，它通过解耦冲突的参数来消除一个参数对另一个参数的影响，而不是参数优化、妥协或权衡。			TRIZ 通述 General TRIZ	1) 矛盾消除 Elimination of a contradiction.

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		A type of a solution to an inventive problem which eliminates influence of one parameter on another parameter by decoupling the conflicting parameters instead of parametric optimization, compromise or trade-off.				2) 冲突解决 Conflict resolution
53	冲突组件 Conflicting Components	涉及技术矛盾的系统的组件。 The system's components which are involved in a technical contradiction.			TRIZ 通述, ARIZ General TRIZ, ARIZ	冲突组件 Conflict Components
54	冲突对 Conflicting Pair	由一个工具和一个产品构成的一对组件, 其间的相互作用导致了阻碍达成所需结果的冲突。 A pair of components formed by a tool and a product interaction between which causes a conflict that prevents from reaching a result required.			ARIZ	
55	现代 TRIZ Contemporary TRIZ	其为古典 TRIZ 的进一步扩展, 包括在 TRIZ 创始人 G. Altshuller 离世后而开发的理论、方法和工具。 Further extension of Classical TRIZ which includes theories, methods and tools developed after the founder of TRIZ G. Altshuller passed away.			TRIZ 通述 General TRIZ	现代 TRIZ Modern TRIZ
56	矛盾 Contradiction	为了达成所需的结果, 必须满足两个相反需求时而出现的情况。矛盾被认为是解决发明问题的主要障碍, 并在许多 TRIZ 工具中用作抽象的发明问题模型。TRIZ 中已知三种类型的矛盾为: 1) 管理矛盾, 2) 工程矛盾, 3) 物理矛盾。 A situation that emerges when two opposite			TRIZ 通述 General TRIZ	冲突 Conflict

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		demands have to be met in order to provide the result required. A contradiction is argued to be a major obstacle to solve an inventive problem and is used as an abstract inventive problem model in a number of TRIZ tools. Three types of contradictions are known in TRIZ: 1) Administrative, 2) Engineering, 3) Physical.				
57	矛盾链 Contradiction Chain	显示具体的管理矛盾转换为具体的技术矛盾，再将此技术矛盾转换为物理矛盾的序列。 A sequence which shows that a specific Administrative Contradiction is converted to a specific Technical Contradiction and then the Technical Contradiction to the Physical Contradiction.			TRIZ 通述 General TRIZ	冲突链 Conflict Chain
58	矛盾矩阵 Contradiction Matrix	提供对最常用的发明原理的系统化访问，以解决特定类型的技术矛盾的一个矩阵。在矛盾矩阵中，矛盾的具体类型是通过预先定义的典型工程参数而进行选择。 A matrix which provides a systematic access to the most frequently used inventive principles to resolve a specific type of a technical contradiction. In the Contradiction Matrix, the specific type of a contradiction is selected by the pre-defined typical engineering parameters.		原先的矩阵是由 G. Altshuller 开发的，而后由其他 TRIZ 开发者进行更新。而原先矩阵的后期修订与修改通常被称为“矛盾矩阵”。 The original matrix was developed by G. Altshuller and later updated by other TRIZ developers. Later revisions and modification of the original matrix are usually called "Contradiction Matrix"	TRIZ 工具 TRIZ Tools	1) 矛盾表 Contradictions Table, 2) 冲突矩阵 Conflict Matrix, 3) 阿奇舒勒矩阵 Altshuller Matrix, 4) 消除典型技术矛盾的基本原理表 Table of Basic Principles for Elimination of Typical Technical



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						Contradictions, 5) 系统冲突矩阵 System Conflict Matrix
59	矛盾树 Contradictions Tree	<p>把引起问题的不同矛盾联系起来的树状结构。进一步而言, 矛盾树的形成即自上而下地将主要的负面或不希望的结果分解为若干相互关联的起因矛盾。</p> <p>A tree which relates different contradictions causing a problem. A contradiction tree is obtained as a result of top-down decomposition of the main negative or undesired effect to a number of inter-related causing contradictions.</p>			因果链分析, 根源性冲突分析 Cause and Effect Chain Analysis, Root Conflict Analysis	
60	控制系统 Control Unit	<p>完整技术系统的关键组件 (子系统) 之一, 根据技术系统的系统完备性法则, 它对供给技术系统其他部分的能量进行控制, 并协调其运作。</p> <p>One of the key components (subsystems) of a Complete Technical System which according to the Law of System Completeness of a technical system provides control over supply of energy to the other parts of the technical system and coordinates their operation.</p>			技术系统进化趋势 Trends of Technical Systems Evolution	
61	卷积期 Convolution	<p>根据钟形进化曲线, 其为技术系统进化时间线上的时间段且在系统扩张期之后。在卷积期中, 技术系统的创新变化导致了系统整体复杂性的降低, 其尺寸和能源消耗的减少; 以及实现系统的主要有用功能或支撑所需</p>	<p>由微芯片代替由独立电子器件组成的电子电路</p> <p>An electronic circuit which consists of</p>		技术系统进化趋势 Trends of Technical Systems Evolution	1) 折合 Folding, 2) 裁剪 Trimming

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		<p>的主要价值参数所需的成本减少，但同时仍然确保所需质量和性能的水平不降低。有三种卷积可能情况：1) 最小，当所有子系统仍然保持独立时；2) 部分，当一些子系统成为一个单一的子系统时；3) 完全，当所有子系统无法独立工作时。在许多情况下，部分和完全卷积需要进行运行机理的改变。</p> <p>An interval on the timeline of a technical system evolution according to the Bell-curve of evolution which follows the phase of the system's Expansion. During Convolution, innovative changes of the technical system result in the decrease of the overall complication of the system, decrease of its dimensions and energy consumption; and decrease of costs required to deliver the system's main useful function or provide the main parameter of value required while still ensuring that the required degrees of quality and performance do not degrade. Three possible scenarios of covolution are possible: 1) Minimal, when all subsystems still remain independent; 2) Partial, when a number of subsystems become a single subsystem; 3) Full, when all subsystems may not work independently. In many cases, partial and full convolution require change of operational principles.</p>	<p>independent electronic devices is replaced by a microchip.</p>			
62	成本分析	功能分析中的一个步骤，用于识别构成所分			功能分析与建模	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
	Cost Analysis	析技术系统的组件的绝对和相对成本。 A step in Function Analysis that identifies the absolute and relative costs of components that constitute a technical system being analyzed.			Function Analysis and Modeling	
63	耦合的相互作用 Coupled Interaction	技术系统中两个组件或技术系统及其超系统中两个组件之间的一种关系，此关系是指同一相互作用可同时造成有益和有害的功能。 A type of a relationship between two components either in a technical system or the technical system and its supersystem which emerges when the same interaction provides both positive and negative functions.			物-场分析，标准解，ARIZ Substance-Field Analysis, Inventive Standards, ARIZ	
64	耦合的发明原理 Coupled Inventive Principles	由某发明原理及其反原理组合而成的一对发明原理。 A pair consisting of a combination of an Inventive Principle and its Anti-Principle.			TRIZ 通述 General TRIZ	
65	创造性想象力发展 Creative Imagination Development	在一些方法和工具的支持下，提高个人创造性想象技能的过程。 A process of improving personal creative imagination skills supported by a number of methods and tools.			创造性个体发展理论 Theory of Creative Individual Development	
66	创意思象力发展技术 Creative Imagination Development Techniques	由各种过程和步骤组成的一些方法和工具，以发展创造性想象力的技能。 A number of methods and tools which comprise various processes and steps to develop creative imagination skills.			创造性个体发展理论 Theory of Creative Individual Development	
67	创造力触发器 Creativity Trigger	在特定情况下激活或增强一个人的创造能力的任何因素。			创造性个体发展理论	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		Any factor that activates or boosts creative capabilities of a person within a specific situation.			Theory of Creative Individual Development	
68	物场模型拆解 Decomposition of Su-Field Systems	一组通过消除物场模型中有害的相互作用来解决发明问题的方法。这些方法通过 76 个标准解系统中的相关标准解呈现出来。 A group of methods of solving inventive problems by eliminating harmful interactions in Su-Fields. These methods are presented by relevant Inventive Standards in the System of 76 Inventive Standards.			物场分析, 标准解 Substance-Field Analysis, Inventive Standards	消除有害作用 Elimination of harmful actions
69	理想度 Degree of Ideality	通过定性评估系统/过程/解决方案提供的有用功能与为了生产、维护和使用此些有用功能所付出的总成本之间的比值, 以识别解决方案、系统或过程的效率程度, 其为对创新性解决方案、技术系统, 或过程的一种无量纲的度量。理想度主要用于评估所分析的技术系统/过程/解决方案是否比提供相同主要有用功能的竞争系统/过程/解决方案更为理想。 A dimensionless measure of an inventive solution, or a technical system, or a process, which identifies the degree of efficiency of the solution, the system, or the process through qualitative estimation of the ratio between useful functionality provided by the system/process/solution and a sum of costs to produce, maintain and utilize the useful functionality. The Degree of Ideality is			科技进化的 TRIZ 模型 TRIZ Models of Technology Evolution	

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		primarily used to evaluate if a technical system/process/solution being analyzed is more ideal than a competing system/process/solution that provides the same main useful function.				
70	迟滞区 Delay Zone	一个流中的某处，而于该处，整体流速显著低于局部流速。迟滞区是流分析所识别的典型缺点。 A location in a flow in which the integral flow speed is significantly lower than local flow speed. A Delay Zone is a typical disadvantage identified by Flow Analysis.			流分析 Flow Analysis	
71	需求 Demand	对产生变化或阻止某些变化的必要性的一种表达，通常用工程或物理术语表达。 An expression of necessity of producing a change or preventing something from a change usually expressed in engineering or physical terms.	1) 货物必须被移动 2) 温度必须增加 3) 负载的重量不得改变 1) Cargo must be moved. 2) Temperature has to increase. 3) Weight of a load must not change.		TRIZ 通述 General TRIZ	
72	衍生资源 Derivative Resource	通过对现有物场资源采取某些动作，可在现有物场资源的基础上获得的新的物质、场，及其属性和参数。 New substances, fields, their properties and parameters that can be obtained on the basis of the existing substance-field resources by	这种动作可以是加热、冷却、分解、改变相态等 Such actions can be heating, cooling, decomposition,		TRIZ 通述, ARIZ General TRIZ, ARIZ	

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		subjecting the latter to certain actions.	changing phase state, etc.			
73	诊断分析 Diagnostic Analysis	基于比较功能交付水平与相关问题的技术系统分析方法。 A method for analysis of a technical system based on comparing the levels of functions delivery and related problems.				
74	矛盾 (模型) 图 Diagram (Model) of a Contradiction	描述工具、产品和它们之间相互作用的图形。有时, 被分析的技术系统的其他组件或其超系统也可包含在图中。 A drawing which presents a tool, a product and interactions between them. Sometimes some other components of a technical system being analyzed or its supersystem can be included to the drawing.		在 ARIZ 中, 使用了互斥的矛盾的两个图。 In ARIZ, two diagrams of mutually exclusive contradictions are used.	ARIZ	
75	问题模型中典型冲突的图 Diagrams of Typical Conflicts in the Models of Problems	即在解决发明问题时最常出现而代表不同技术矛盾模型的数种图。 A number of drawings which present different models of technical contradictions emerging most frequently when solving inventive problems.		列于 ARIZ 中 Listed in ARIZ	ARIZ	
76	辩证法 Dialectics	哲学中的一个方向, 其提出了一种检验和讨论对立思想的方法, 以解决冲突。辩证法的数个底层概念被 TRIZ 的创始人 G. Altshuller 用来定义 TRIZ 的基础背景及其主要概念, 如理想度、技术矛盾, 和物理矛盾等。 A direction in philosophy which proposes a method of examining and discussing opposing ideas in order to resolve a conflict. Several		虽然辩证法不是 TRIZ 术语, 但辩证法并不广为人知, 然而其对于理解 TRIZ 的基础却非常重要。 Although dialectics is not a TRIZ term but dialectics is not widely known while is important to understand the basic foundations of TRIZ.	TRIZ 通述 General TRIZ	

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		underlying concepts from dialectics were used by the founder of TRIZ G. Altshuller to define the fundamental background of TRIZ and its major concepts such as ideality, technical and physical contradictions.				
77	定向进化 Directed Evolution	利用技术系统进化的模型、趋势，和路线，对技术系统或科技进行更远进化预测的方法和工具。 A method and a tool for performing the forecast of further evolution of a technical system or a technology with the use of the Models, Trends, and Lines of Technical Systems Evolution		定向进化由 Ideation International 公司所开发。 Directed Evolution was developed by Ideation International, Inc.	TRIZ 工具 TRIZ Tools	
78	缺点 Disadvantage	降低技术系统或过程的理想度或感知价值的特定特征。 A particular feature that reduces the degree of ideality or perceived value of a technical system or a process.			TRIZ 通述 General TRIZ	
79	颠覆性创新 Disruptive Innovation	基于 TRIZ 体系的关于发明的五个等级的高等级发明性解决方案以解决长期存在的矛盾或提出颠覆现有科技的新技术体系。通常，此种颠覆性创新会为现有技术系统的进化提供 S 曲线的跳跃，或开启一个崭新科技的 S 曲线。 An inventive solution of high level according to the TRIZ system of Five Levels of Inventions that either resolves a longstanding contradiction or proposes a new technical system that disrupts the existing technology.			TRIZ 通述 General TRIZ	



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		Usually such a disruptive innovation provides either an S-jump in the evolution of an existing technical system or launches a radically new Technology S-curve.				
80	双物场模型 Double Su-Field	至少含有两个由物质组成的组件, 及提供组件间相互作用的两个不同场的一种物场模型。 A Su-field which has at least two components made of substance and two different fields providing interaction between the components.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
81	双重性 (原理-反原理) Duality “Principle-Anti-Principle”	一种假设, 它表明每种发明问题的解决方法都可以与提出相反建议的发明问题的解决方法相辅相成。许多成对的 TRIZ 发明原理可以被认为是相反的。 A hypothesis which states that every inventive problem solving method can be complemented with an inventive problem solving method proposing an opposite recommendation. Many couples of the TRIZ inventive principles can be considered as opposite.			TRIZ 通述 General TRIZ	
82	动态化 Dynamisation	朝着更灵活结构方向的进化, 而能适应持续变化的环境条件 (多功能性) 和多样的性能规范。 Evolution in the direction toward more flexible structures capable of adapting to changing environmental conditions (multifunctionality) and to varying performance regimes.			技术系统进化趋势 Trends of Technical Systems Evolution	

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83	结果缺点 Effect Disadvantage	因果链中由某一缺点直接引起的缺点。 Disadvantage in the Cause-Effect Chain that is directly caused by a given disadvantage			因果链分析 Cause and Effect Chain Analysis	
84	含电场的物场模型 E-Field	其中一个组件由具有导电性的材料制成且受电场控制的物场模型。 A Su-Field in which one of components is made from material possessing electrical conductivity and which is controlled by electrical field.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
85	能量源 Energy Source	技术系统或其超系统的组件, 用于存储和提供运行系统所需的能量。 A component of either a technical system or its supersystem that stores and provides energy required to operate the system.			技术系统进化趋势 Trends of Technical Systems Evolution	
86	引擎 Engine	完整技术系统的关键组件 (子系统) 之一, 根据技术系统的完备性法则, 其将能量转换为运行执行单元所需的特定类型。 One of the key components (subsystems) of a Complete Technical System which according to the Law of System Completeness of a technical system converts energy to a specific type required to operate a working unit.			技术系统进化趋势 Trends of Technical Systems Evolution	
87	工程矛盾 Engineering Contradiction	见技术矛盾 See Technical Contradiction			TRIZ 通述, TRIZ 工具 General TRIZ, TRIZ Tools	1) 系统矛盾 System Contradiction 2) 需求矛盾 Contradiction of demands
88	工程参数	一个可变的有量纲或无量纲的可衡量因子,	明确的电导率值、		TRIZ 概况, 矛盾矩	技术参数

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	Engineering Parameter	其可是明确具体的，亦可是汇集成成的，它参与定义一个技术系统、其子系统或超系统的属性，并以科技相关的术语（物理、化学等）表示。 A variable dimensional or dimensionless measurable factor, either specific or aggregated, that participates in the definition of an attribute of a technical system, its subsystem, or supersystem and is expressed in terms related to technology (physical, chemical, etc.)	以帕斯卡秒为度量的明确粘度值 Specific level of conductivity, specific level of viscosity measured in Pascal seconds		阵, ARIZ General TRIZ, Contradiction Matrix, ARIZ	Technical Parameter
89	工程系统 Engineering System	见技术系统 See Technical System				
90	工程问题 Engineering Problem	需要进行某种改变的情况，以建立新的技术系统，或改进现有的技术系统，或防止技术系统受内部或外部有害因素的影响。 A situation which requires to perform a certain change to create new technical system, or improve an existing technical system, or to prevent the technical system from harmful internal or external factors.			TRIZ 通述 General TRIZ	
91	环境组件 Environment Component	给定物场模型的环境中的组件，可用于构建新的物场模型，或拆解或进化现有的物场模型。 A component in the environment of a Su-Field given that can be used to build a new Su-Field, or decompose or evolve the existing Su-Field.			物-场分析，标准解，ARIZ Substance-Field Analysis, Inventive Standards, ARIZ	环境资源 Environment Resource
92	技术系统进化	为了更好地满足超系统的需求，对现有技术			技术系统进化趋势	科技进化

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	Evolution of Technical Systems	<p>系统引入改变或开发崭新的技术系统的持续的过程。</p> <p>A continuous process of introducing changes to the existing technical systems or developing radically new technical systems in order to provide a better satisfaction of the supersystem's needs.</p>			Trends of Technical Systems Evolution	Technology Evolution
93	物场系统进化 Evolution of Su-Field Systems	<p>其作为一种假设，而表示基本的物场倾向于随着时间的推移而发展，以提高其性能、质量和其他参数。一组基于物场系统进化的问题解决方法呈现于 76 个标准解的系统中。</p> <p>A hypothesis which states that elementary Su-Fields tend to evolve over the time in order to increase their performance, quality and other parameters. A group of problem solving methods based on the evolution of Su-Field Systems is presented in the System of 76 Inventive Standards.</p>			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
94	进化模式 Evolution Pattern	<p>对一个技术系统在其进化过程中所经历的具体转变的描述，这种转变对大多数其他技术系统来说是共通的，而与其所属的技术领域无关。</p> <p>A description of a specific transformation experienced by a technical system during its evolution which is common for majority of other technical systems independently of technology domains they belong to.</p>			技术系统进化趋势 Trends of Technical Systems Evolution	
95	进化潜力分析 Evolutionary Potential	一种有助于确定技术系统或其子系统的进化潜力的分析工具，其是基于完成一张指出		来自各个 TRIZ 发展中心的现代 TRIZ 的当今的版本提出了他们各	技术系统进化趋势 Trends of Technical	进化趋势分析 Evolutionary

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	Analysis	系统或特定子系统对于每路技术系统进化趋势的当前位置的图表。 An analytical tool that helps to determine the potential of a technical system or its subsystem to evolve based on completing a chart with indication of current position of the system or a specific subsystem with respect to each Trend of Technical Systems Evolution.		自基于不同的技术系统进化趋势集合的进化潜力分析的版本。 Modern versions of Contemporary TRIZ from various TRIZ development centers present their own versions of EPA with different collections of the Trends of Technical Systems evolution.	Systems Evolution	Trends Analysis
96	进化趋势分析 Evolutionary Trends Analysis	见进化潜力分析 see Evolutionary Potential Analysis			技术系统进化趋势 Trends of Technical Systems Evolution	进化潜力分析 Evolutionary Potential Analysis
97	过量功能 Excessive Function	由功能载体执行的实质作用，导致功能对象的参数或状态得到改善或保持，但使用了太多的精力与非最佳的资源量来执行该作用。 A physical action performed by an object that results in a positive change or preservation of a value of a parameter or a state of an object of the function but the action is performed with too much effort or with the use of non-optimal amount of resources.			功能分析与建模 Function Analysis and Modeling	
98	过量的相互作用 Excessive Interaction	其为技术系统中的两个组件或技术系统及其超系统中的两个组件间的一种关系，而此关系出现于当一个组件向另一个组件提供正向的功能，但此功能的交付或获得此功能交付的结果需要过多的资源时。 A type of a relationship between two components either in a technical system or the technical system and its supersystem which emerges when one component provides a			物场分析，标准解 Substance-Field Analysis, Inventive Standards	

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		positive function towards another component but the delivery of the function or obtaining the result from the function delivery requires more resources than necessary.				
99	过量作用 Excessive Action	见过度的相互作用 see Excessive Interaction.			ARIZ, 功能分析与建模 ARIZ, Functional Analysis and Modeling	
100	现有的系统 Existing System	存在于给定时刻的一个技术系统, 且能在预先定义的条件提供主要的有用功能。 A technical system that exists at a given moment of time and is capable of delivering its main useful function under predefined conditions.			TRIZ 通述 General TRIZ	
101	扩张期 Expansion	其为技术系统进化时间线上的时间段, 此时间段内, 目标为达到技术系统主要有用功能的预期性能的创新改变导致了系统的整体复杂化, 增加其尺寸与能源消耗, 及实现主要有用功能所需的成本。通常, 系统的扩展阶段被系统的卷积期所取代。 An interval on the timeline of a technical system evolution when innovative changes targeted at reaching the desired performance of its Main Useful Function result in overall complication of the system, increase of its dimensions and energy consumption, and costs required to deliver the Main Useful Function. Usually the phase of system's			技术进化的 TRIZ 模型 TRIZ Models of Technology Evolution	展开 Unfolding

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		Expansion is replaced with a phase of the system's Convolution.				
102	外部复合物场模型 External Complex Su-Field	<p>一个完整的物场模型，其中一个物质呈现出两个不同物质的组合，而这两个物质中的一个物理性地附着于另一个物质。</p> <p>A complete Su-Field in which one of the substances presents a combination of two different substances while one of the two substances is physically attached to another one.</p>			物-场分析，标准解 Substance-Field Analysis, Inventive Standards	
103	外部条件 External Conditions	<p>超系统中影响技术系统行为并对其特性和属性值产生影响的所有类型的因素。</p> <p>All types of factors in a supersystem which influence behavior of a technical system and produce impact on its features and values of its attributes.</p>			TRIZ 通述 General TRIZ	
104	创想图 Fantogramma	<p>一种用于发展创造性想象力和产生新的科幻想法的方法和工具。该工具使用一个二维矩阵，其中一个轴上列出了代表一个系统的生命周期和功能的各个方面的所谓通用指标，另一个轴上呈现了一些产生想法的原则。新的想法是通过将一个特定的原则应用于一个通用指标的具体实例而获得的。</p> <p>A method and a tool for creative imagination development and generating new science-fiction ideas. The tool uses a two-dimensional matrix with one axis along which the so-called universal indicators representing various aspects of life-cycle and</p>			创造性个体发展理论 Theory of Creative Individual Development	



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		functioning of a system are listed and another axis along which a number of principles for generating ideas are presented. New ideas are obtained by applying a specific principle to a specific instance of a universal indicator.				
105	特性 (指于特性转移中) Feature (in Feature Transfer)	将替代技术系统的一个特点转移到基础技术系统中, 以消除基础系统的缺点。 A characteristic of an alternative technical system to be transferred to the base technical system to eliminate the disadvantage of the base system.			特性传递 Feature Transfer	
106	提供特性的替代技术系统 Feature Providing Alternative Technical System	被选择进行传递其特性的替代技术系统。 An alternative technical system chosen for Feature Transfer.			特性传递 Feature Transfer	
107	特性传递 Feature Transfer	一种改进给定技术系统 (基础技术系统) 的方法和工具, 其通过从替代技术系统 (竞争技术系统) 中转移某些特性, 而目的是将有用的特性结合到单一个系统上。 A method and a tool for improvement of a technical system given (base technical system) by transferring certain features from the alternative technical system (competitive technical system) with the aim to combine the useful features in a single system.			TRIZ 工具 TRIZ Tools	
108	创造性个体的特点 Features of Creative Personality	使一个人能够在不同的活动领域执行创造性的任务并达到成功结果的一套个人才能和技能。			创造性个体发展理论 Theory of Creative	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		A set of personal talents and skills which enable a person to perform creative tasks and reach successful results in diverse areas of activities.			Individual Development	
109	含有铁磁性组件的物场模型 Fe-Field	一种物场模型, 其中一个组件由铁磁性材料制成并受电磁场控制。 A Su-Field in which one of the components is made from ferromagnetic material and is controlled by electromagnetic field.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
110	场 Field	没有静质量的实体, 它传递技术系统中以物质作为组件 (子系统) 之间的相互作用。 A material object without rest mass that transmits interaction between components (subsystems) of a technical system that are represented as substances.	TRIZ 中场的例子包括以下场: 机械场、声场、热场、磁场、电场、电磁场。有时还增加了分子间、生物、信息等额外的场。 Examples of fields in TRIZ include the following fields: mechanical, acoustic, thermal, magnetic, electric, electromagnetic. Sometime additional fields like intermolecular, biological, informational are added.	在物场分析中, 场的定义与物理学中场的定义不同。可使用呈现不同类型能量交换的更具体的术语。例如, 可以使用 "声场 "或 "热场 "或 "摩擦力 "这样的术语。 In Substance-Field Analysis, definition of a field varies from definition of a field in physics. More specific terms presenting different types of energy exchange can be used. For example, such terms can be used as "acoustic field" or "thermal field", or "friction forces".	物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	

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111	流 Flow	具有相同的共同特性的一序列事件。 A sequence of events that have the same common feature.			流分析 Flow Analysis	
112	流分析 Flow Analysis	一种分析方法和工具, 用于识别技术系统中能量流、物质流和信息流的缺点。 An analytical method and a tool which identifies disadvantages in flows of energy, substances, and information in a technical system.			流分析 Flow Analysis	
113	流缺点 Flow Disadvantage	在流分析中识别出被分析的技术系统的缺点。 A disadvantage of a technical system being analyzed identified during Flow Analysis.	瓶颈、“灰色区域”、“停滞区域”等 Bottlenecks, "Gray Zones", "Stagnation Zones", etc.		流分析 Flow Analysis	
114	流分布分析 Flow Distribution Analysis	流分析的一部分, 用于识别流的分布及其缺点。 A part of Flow Analysis that identifies distribution of flows and their disadvantages.			流分析 Flow Analysis	
115	焦点对象法 Focal Objects Method	一种基于将随机选择对象的特性和功能向给定对象 (焦点对象) 传递以减少心理惯性程度及产生新跳脱常规想法的方法和工具。 A method and a tool for reducing the degree of psychological inertia and generating new out-of-the box ideas based on transferring features and functions of randomly chosen objects towards an object given (a focal object).			创造性个体发展理论 Theory of Creative Individual Development	
116	生成科幻的四级算法 Four-Level Algorithm for	使用 TRIZ 概念, 如: 理想度、向宏观过渡, 来产生新的科幻概念的方法和技术。		虽然该技术的原始版本仅由四个级别组成, 但其现代版本并不对	创造性想象力发展 Creative Imagination	1) 生成科幻概念的多级算法

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
	Generating Science-Fiction Ideas	A method and a technique which use TRIZ concepts such as Ideality and Macro-Level Transition to produce new science-fiction ideas.		可引入多少个级别施加限制。 While the original version of the technique comprised of four levels only, its modern version does not impose limits on how many levels can be introduced.	Development	Multi-Level Algorithm for Generating Scifi Ideas, 2) 生成科幻概念的四层算法 Four-storied algorithm for generating scifi ideas
117	功能 Function	对由一个实体（功能载体）执行某作用而导致另一个实体（功能对象）的属性值的改变或保持的阐述。 Specification of an action performed by a material object (Function Carrier) that results in a change or preservation of a value of an attribute of another material object (Object of the Function).			功能分析与建模 Function Analysis and Modeling	
118	功能分析 Function Analysis	一种分析方法和工具，以功能载体、功能对象、及其功能，与功能结果和系统组件的成本，而对技术系统及其超系统进行建模。由此产生的技术系统的功能模型有助于更好地理解、提取、可视化和分类系统中的功能关系，以对功能评级及识别问题。 An analytical method and a tool to model technical systems and their supersystems in terms of functional carriers, objects of the functions, their functions, and the costs of functions delivery and system components. A			功能分析与建模 Function Analysis and Modeling	1) 功能性分析 Functional Analysis, 2) 功能-成本分析 Function-Cost Analysis, 3) 功能-属性分析 Function-Attribute Analysis 4) 价值工程分析

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		resulting Function Model of a technical system helps to better understand, extract, visualize, and categorize functional relationships in the system, to rank functions and identify problems.				Value-Engineering Analysis
119	功能载体 Function Carrier	一个执行（交付）功能的实体。其可是一个物质，亦可是一个场，或者两者的组合。 A material object that performs (delivers) a function. Can be either a substance, or a field, or a combination of both.			功能分析与建模 Function Analysis and Modeling	
120	功能分类 Function Category	其为功能的一个特征，以描述功能的有用性。一个功能可以是有用的，有害的，或中性的。 A characteristic of a function that describes its usefulness. A function can be useful, harmful, or neutral.			功能分析与建模 Function Analysis and Modeling	
121	功能缺点 Function Disadvantage	在功能建模过程中，被识别出的技术系统缺点。这些缺点包括有害的功能，以及未被适当（即过量的或不足的）执行的有用功能。 A drawback of a technical system identified during Function Modeling. These drawbacks include harmful functions, as well as inadequately (i.e., excessively or insufficiently) performed useful functions.			功能分析与建模 Function Analysis and Modeling	
122	功能模型 Function Model	通过功能分析得出的技术系统的模型，而识别并描述了该系统和其超系统的各组件之间的功能的关系。代表功能性关系的功能，是由类别（有用的、有害的、中性的）、性能水平（不足的、过量的）、成本等级（不			功能分析与建模 Function Analysis and Modeling	

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		<p>重要、可接受和不可接受) 和相应组件的成本来表征。</p> <p>A model of a technical system resulting from Function Analysis that identifies and describes functional relationships between by the components of the System and its Supersystem. Functions representing the functional relationships are characterized by category (useful, harmful, neutral), quality of performance (insufficient, excessive), cost level (insignificant, acceptable and unacceptable) and cost of corresponding components.</p>				
123	功能建模 Function Modeling	<p>功能分析的一部分, 定义了建立功能模型的过程和规则。</p> <p>A part of Function Analysis which defines a process and rules for building a Function Model.</p>			功能分析与建模 Function Analysis and Modeling	
124	功能参数 Function Parameter	<p>识别一个功能的性能的参数</p> <p>A parameter that identifies the performance of a function.</p>			功能分析与建模 Function Analysis and Modeling	
125	功能评级 Function Rank	<p>根据功能对象的类型 (即被分析的技术系统的目标对象, 技术系统的另一个组件, 或超系统组件) 以确定有用功能的重要性的无量纲的度量。</p> <p>A dimensionless measure that determines the importance of the useful function based on the type of its object (i.e., target object of a technical system being analyzed, another</p>			功能分析与建模 Function Analysis and Modeling	

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		component of the technical system, or component of the supersystem).				
126	功能再分配 Function Redistribution	<p>将因剪裁而被剪裁掉的组件的有用功能，重新分配给被分析的技术系统的其他组件或其超系统组件。</p> <p>Redistribution of useful functions of a component that has been trimmed as a result of Trimming to other components of the technical system being analyzed, or its supersystem</p>			剪裁 Trimming	
127	功能性 Functionality	<p>一个关于某组件或技术系统的总体功能贡献相对于该组件或该技术系统所提供的总体功能价值的无量纲的度量。</p> <p>A dimensionless measure of the overall functional contribution by a component or a technical system to the overall functional value delivered by the component or by the technical system.</p>			TRIZ 通述 功能分析与建模 General TRIZ, Function Analysis and Modeling	
128	功能-理想建模 Function-Ideal Modeling	<p>通过减少若干个提供系统的或过程的功能性的组件，在不损失系统的或过程的质量和性能的情况下，提高技术系统或过程的理想度的程度的一种方法。实现功能-理想模型的工具被称为 "剪裁"。</p> <p>A method of increasing the degree of ideality of a technical system or a process by decreasing a number of components providing the system's or the process' functionality without loss of quality and performance of the system or the process. A tool which</p>			TRIZ 工具 TRIZ Tools	

序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
		implements Function-Ideal Modeling is called "Trimming".				
129	功能导向搜索 Function-Oriented Search	一种通过使用功能的标准, 基于识别其他技术领域的现有技术的解决问题的方法和工具。 A method and a tool for problem solving based upon identifying existing technologies in other areas of technology using function criteria.		功能导向搜索 (FOS) 是由美国的 Gen3 Partners 公司提出并开发的。Function-Oriented Search (FOS) was proposed and developed by Gen3 Partners, USA.	TRIZ 工具 TRIZ Tools	
130	一般化功能 Generalized Function	一种抽象的功能, 其具体的对象及相关作用被简化为通用的术语。 An abstract function for which a specific object and associated action are reduced to universal terms.	具体功能“去除水” 可被一般化为“运送液体” Specific function "remove water" can be generalized to "transport liquid".		科学效应库 Catalogues of Effects	
131	通用工程功能 Generic Engineering Function	可被具象化为多个更为具体的工程功能的抽象的工程功能 An abstract engineering function that can be instantiated to a multitude of more specific engineering functions.	被一般化后的工程功能“运送液体”可以被具象化为“去除水”, “吸收蒸汽”等功能 The generalized technical function "transport liquid" can be instantiated to such functions as "remove water", "absorb vapor", etc.		矛盾矩阵 Contradiction Matrix	
132	通用工程参数	见典型参数			矛盾矩阵	典型参数 Typical



序号	术语	释义	示例	说明	术语最频繁使用的范畴	同义词或其他翻译
	Generic Engineering Parameter	see Typical Parameter			Contradiction Matrix	parameter
133	几何效应 Geometrical Effect	可用于解决发明问题的某种形状或形状的组合。 A specific shape or combination of shapes that can be used for inventive problem solving.	使用双曲线形状有助于改善固体的位移 The use of hyperbolic shape helps to improve displacement of solid bodies.		科学效应库 Catalogues of Effects	
134	金鱼法 Goldfish Method	其为处理一种情境的方法和技巧, 首先把所期望的结果表述为 "不可能实现", 然后再将其转化为一组可处理矛盾的问题表述。 A method and a technique of dealing with a situation when the result desired is first formulated as "impossible to achieve" and then transformed to a set of problem formulations presented in terms of manageable contradictions.			创造性想象力发展 Creative Imagination Development	
135	损害 Harm	技术系统在其生命周期的任何时刻对其子系统或超系统产生的任何类型的负面效应, 其降低了技术系统整体的理想度。 Any type of a negative effect produced by a technical system during any moment of its lifecycle with respect to its subsystem or its supersystem and which decreases the overall degree of ideality of the technical system.			科技进化的 TRIZ 模型 TRIZ Models of Technology Evolution	
136	有害行为 Harmful Action	见功能、负面 see function, negative			ARIZ, 功能分析与建模	

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					ARIZ, Functional Analysis and Modeling	
137	有害功能 Harmful Function	一个实体所执行的实质作用, 其导致另一实体的属性值 (参数) 或状态发生不可接受的变化或不可接受的保持。 A physical action performed by an object that results in unacceptable change or unacceptable preservation of value of an attribute (parameter) or a state of another material object.			功能分析与建模 Function Analysis and Modeling	功能 Function, 负面 negative
138	有害相互作用 Harmful Interaction	技术系统中的两个组件之间或技术系统与其超系统的两个组件之间的一种关系, 而此关系出现于当一个组件对另一个组件提供有害的功能时。 A type of a relationship between two components either in a technical system or between the technical system and its supersystem which emerges when one component provides a negative function towards another component.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
139	有害机器 Harmful Machine	一个技术系统的模型, 其源自于在提取和理解产生负面效应的系统的过程中。 A model of a technical system which results from the process of extracting and understanding processes in the system which create negative effects.			TRIZ 通述 General TRIZ	有害系统 Harmful System
140	损害 Harms	一个技术系统产生的所有损害的总和。 A sum of all harms produced by a specific			科技进化的 TRIZ 模型	

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		technical system.			TRIZ Models of Technology Evolution	
141	探索法 Heuristics	<p>一种因缺乏可提供如何获得保证 100%成功的所需结果的精确理论，而基于使用在特定条件下有高成功概率的统计确定的规则以实现所需结果的方法。</p> <p>A method of achieving a result required based on using statistically determined rules with high probability of success under specific conditions due to the lack of exact theory proposing how to obtain the result required with the 100% guarantee of success.</p>			TRIZ 通述 General TRIZ	
142	杂交 Hybridization	<p>将两个或更多个主要有用功能相同、相似或相反的技术系统合并成一个技术系统的技术。</p> <p>A technique of merging two or more technical systems that have identical, similar or inverse main useful functions to a single technical system.</p>			TRIZ 工具 TRIZ Tools	
143	想法 Idea	<p>创作者对一个发明问题的潜在解决方案的表达，然其可行性尚未得到证实。</p> <p>An author's expression of a potential solution to an inventive problem whose feasibility has not been proven.</p>			TRIZ 通述 General TRIZ	
144	理想技术系统 Ideal Technical System	<p>一个具有无限价值的技术系统。例如，它可能既没有组件，也没有相关的成本，但仍能提供理想的功能性。与理想最终解类似，这样的系统可能不存在，但它的定义可作为设</p>			TRIZ 通述 General TRIZ	

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		计具有最高理想度的技术系统的目标。 A technical system that has an infinite value. For example, it may have neither components nor associated costs, but still deliver the intended functionality. Similar to the Ideal Final Result such the system may not exist but its definition serves as a target to design the technical system with the highest degree of ideality possible.				
145	理想最终解 (TRIZ 通述) Ideal Final Result (General TRIZ)	一个发明问题的解决方案, 有助于在零补偿因子的情况下获得所需的结果。根据物理学定律, 这样的解决方案可能永远无法实现, 因此, 理想最终解的概念是用来减少问题解决过程中的心理惯性程度, 其目的是让问题解决者寻找最高理想度的解决方案。 A solution to an Inventive Problem which helps to obtain the result required with zero compensation factors. As follows from the laws of physics such a solution may never be achieved and therefore the concept of the Ideal Final Result serves to reduce the degree of psychological inertia during the problem solving process by targeting a problem solver towards searching for a solution with the highest degree of ideality.		在 TRIZ 的发展过程中, 理想最终解的定义不断升级, 因此在 TRIZ 的文献中可以找到不同的定义。在现代 TRIZ 中, 理想最终解主要用于 ARIZ 中。 During development of TRIZ, definition of Ideal Final Result was continuously upgraded, therefore different definitions may be found in the TRIZ literature. In modern TRIZ, Ideal Final Result is used primarily in ARIZ.	TRIZ 通述, TRIZ 工具 General TRIZ, TRIZ Tools	IFR
146	理想最终解 (在 ARIZ 中) Ideal Final Result (in ARIZ)	一个发明问题的解决方案的模型, 被表达为对 X 组件的一系列合理要求。 A model of a solution to an inventive problem formulated as a set of justified requirements			ARIZ	IFR

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		towards the X-component.				
147	理想功能 Ideal Function	不存在但产生效果的功能。 A function that does not exist but its effect is produced.			功能分析与建模 Function Analysis and Modeling	
148	理想机器 Ideal Machine	见理想技术系统 see Ideal Technical System			TRIZ 通述 General TRIZ	
149	理想资源 Ideal Resource	一种不存在的物场资源，但其属性是可用的，且可用来解决一个发明问题。 A substance-field resource that does not exist but its property is available and can be used to solve an inventive problem.		由于物理定律，理想资源可能不存在，但其定义是被用来寻找高理想度的发明性解决方案。 Due to laws of physics the Ideal Resource may not exist but its definition is used to search for inventive solutions with high degree of ideality.	TRIZ 通述 General TRIZ	
150	理想解 Ideal Solution	见理想最终解 see Ideal Final Result			TRIZ 通述 General TRIZ	
151	理想物质 Ideal Substance	一种不存在的物质，但其属性是可用的，且可用来解决一个发明问题。 A substance that does not exist but its property is available and can be used to solve an inventive problem.		由于物理定律，理想物质可能不存在，但其定义被用来寻找具有高度理想度的创造性解决方案。 Due to laws of physics the Ideal Substance may not exist but its definition is used to search for inventive solutions with high degree of ideality.	TRIZ 通述 General TRIZ	
152	理想度 Ideality	发明性解决方案的无量纲度量，其定性地识别了为生产、维护和使用该解决方案所需的补偿因子总和接近零值的程度。 A dimensionless measure of an inventive solution which qualitatively identifies how			科技进化的 TRIZ 模型 TRIZ Models of Technology Evolution	

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		closely the sum of compensation factors to produce, maintain and utilize the solution approaches zero value.				
153	理想度审查 Ideality Audit	<p>通过与一个或多个有竞争力的技术系统进行比较, 来鉴定被分析的技术系统的理想度的程度的一个过程。</p> <p>A process of identification of the degree of ideality of a technical system being analyzed by comparing it with one or more competitive technical systems.</p>			TRIZ 通述 General TRIZ	
154	理想度等式 Ideality Equation	<p>技术系统的有用功能性与该系统产生的损害之间的比值。</p> <p>The ratio between Useful Functionality of the technical system versus Harms that are produced by the system.</p>		<p>不同的 TRIZ 学派提出了数种类型的理想度的等式。例如, 其他一些类型的理想度等式 (由 Ideation International 公司) 提出, 在分母的损害中加入成本。</p> <p>There are several types of ideality equations proposed by different TRIZ Schools. E.g., some other type of the ideality equation (by Ideation International, Inc.) proposes to add costs to harms in the denominator.</p>	科技进化的 TRIZ 模型 TRIZ Models of Technology Evolution	理想度方程式 Ideality Formula
155	想法景观图 Ideas Landscape	<p>一个图形化图表, 展示了被评价且分别由代表不同评价标准的两个或多个维度定位的想法。</p> <p>A graphical chart that represents ideas evaluated and positioned respectively two or more dimensions representing different evaluation criteria.</p>			TRIZ 工具 TRIZ Tools	

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156	想法组合 Ideas Portfolio	其为发明性解决方案想法的清单, 而于其中所有产生的想法都根据某个或一组标准进行了分组、结构化或分类。 A list of inventive solution ideas in which all the ideas generated are grouped, structured or categorized according to a certain criterion or a set of criteria.			TRIZ 工具 TRIZ Tools	
157	改善参数 Improving Parameter	一个典型的技术参数, 其属性值必须被改进或改变, 以解决一个发明问题。改进参数列表于矛盾矩阵中使用。 A typical technical parameter whose value of an attribute must be improved or changed to solve an inventive problem. A list of Improving Parameters is used in the Contradiction Matrix.			矛盾矩阵 Contradiction Matrix	1) 改善特性 Improving Feature, 2) 正向参数 Positive Parameter
158	不完整的物场模型 Incomplete Su-Field	用物场分析表达问题模型的物场模型, 而它缺少一个或多个物质, 或一个场, 或为建立可工作的技术系统所需的相互作用。 A Su-Field which represents a model of a problem expressed in terms of Substance-Field Analysis and which lacks one or more substances, or a field, or an interaction to create a working technical system.			物-场分析, 标准解 Substance-Field Analysis, Inventive Standards	
159	创新 Innovation	一个已实施的发明性解决方案。工程和科技的创新主要是基于一个或若干个发明或科学发现。 An implemented inventive solution. Innovations in engineering and technology are			TRIZ 通述 General TRIZ	

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		primarily based on a single or a number of inventions or scientific discovery.				
160	创新日程 Innovation Agenda	与组织的增长目标直接相关的创新项目的多年期计划。 Multi-year plan for innovation projects directly linked to the organization's growth objectives.			TRIZ 通述 General TRIZ	
161	创新过程 Innovation Process	将发明性解决方案的想法转变为可行且包含其进一步实现的解决方案的过程。根据最初的情况，创新过程可以包括产生新解决方案想法的发明过程，而若此发明想法是从外部引入的，则不包括该过程。 A process of transforming an idea of an inventive solution to a working solution including its further implementation. Depending on the initial situation, the innovation process can include the inventive process to generate a new solution idea or exclude it if the inventive idea is brought from outside.			TRIZ 通述 General TRIZ	创新过程 Innovative Process
162	创新概念 Innovative Concept	一个创新解决方案的想法，其可行性已被证明，但不一定实施。 An idea of innovative solution whose feasibility has been proven but not necessarily implemented.			TRIZ 通述 General TRIZ	
163	创新任务 Innovative Task	必须通过执行发明性的过程来达到的特定类别的目标。 A specific category of a goal that has to be reached by performing an inventive process.	1) 消除负面效果， 2) 提高性能，3) 从根本性地削减成本		TRIZ 通述 General TRIZ	



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			1) To eliminate negative effect, 2) to increase performance, 3) to radically cut costs, etc.			
164	不足的功能 Insufficient Function	<p>由物体，即功能载体，执行的实际作用，其导致功能对象的属性值的正向变化或保持，但该作用被执行的性能程度低于要求。</p> <p>A physical action performed by an object -function carrier that results in a positive change or preservation of a value of an attribute of an object of the function but the action is performed with fewer degree of performance than required.</p>			功能分析与建模 Function Analysis and Modeling	
165	不足的相互作用 Insufficient Interaction	<p>其为技术系统中的两个组件或一个技术系统及其超系统中的两个组件之间的一种关系，而此关系出现于当一个组件对另一个组件提供正向的功能，但此功能交付的性能程度或功能交付的所需结果没有达到要求的值时。</p> <p>A type of a relationship between two components either in a technical system or in the technical system and its supersystem which emerges when one component provides a positive function towards another component but the degree of performance of the function delivery or the required result from the function delivery do not reach the</p>			物-场分析，标准解 Substance-Field Analysis, Inventive Standards	

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		value required.				
166	矛盾需求激化 Intensification of Contradicting Demands	将矛盾中的属性值向其极限或无穷大的方向增加。 Increasing values of attributes in a contradiction towards their limits or infinity.			ARIZ	冲突激化 Conflict Intensification
167	激化的矛盾 Intensified Contradiction	其为矛盾的表述, 而此矛盾中所涉的属性值接近其极限或无穷大的。 A formulation of a contradiction in which values of attributes involved to the contradiction approach their limits or infinity.			ARIZ	激化的冲突 Intensified Conflict
168	相互作用分析 Interaction Analysis	功能分析的一个部分, 其识别组件模型中所包含的组件之间的相互作用。 A part of Function Analysis that identifies interactions between components included in a Component Model.			功能分析与建模 Function Analysis and Modeling	结构分析 Structure Analysis
169	相互作用矩阵 Interaction Matrix	识别系统组件之间以及系统组件与其超系统组件之间存在的或可能的相互作用的矩阵。 A matrix that identifies present or potentially possible interactions both between components of a technical system and between the components of the technical system and components of its supersystem.			功能分析与建模 Function Analysis and Modeling	
170	中间缺点 Intermediate Disadvantage	因果链中, 不是目标, 也非关键缺点的缺点。 A disadvantage in the Cause-Effect Chain that is not a Target or a Key Disadvantage.			因果链分析 Cause and Effect Chain Analysis	
171	内部复合物场模型 Internal Complex Su-Field	一个完整的物场模型, 其中一个物质呈现出两种不同物质的组合, 而这两种物质中的一种物理性地被添加 (插入、混合等) 到另一			物-场分析, 标准解 Substance-Field Analysis, Inventive	

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		<p>个物质中。</p> <p>A complete Su-Field in which one of the substances presents combination of two different substances while one the two substances is added physically (inserted inside, mixed, etc.) to another substance.</p>			Standards	
172	发明 Invention	<p>其是对现有技术系统或过程的重大改进，或开发崭新的技术系统或过程，且其具有新颖性并提供社会价值。发明可通过以下方式获得：1) 解决现有技术系统或过程所引起的矛盾的结果，或 2) 利用科学效应和发现来开发具有新技术功能的崭新的工程解决方案。</p> <p>Either a significant improvement of an existing technical system or a process or development of a radically new technical system or a process, which possesses novelty and provides social value. An Invention can be obtained by either 1) on the result of resolving a contradiction caused by an existing technical system or a process, or 2) on the use of a scientific effect and discoveries used to develop a radically new engineering solution with a new technical function.</p>			TRIZ 概况 General TRIZ	
173	发明原理 Inventive Principle	<p>其为提供如何解决以工程矛盾或物理矛盾体现的发明性问题的通用指南的建议。发明原理是在对描述发明（如专利）和创新的多种文件进行广泛研究的基础上而提炼和制定的。</p>			TRIZ 工具, TRIZ 知识库 TRIZ Tools, TRIZ Knowledge Bases	

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		A recommendation that provides generic guideline(s) indicating how to solve an inventive problem represented as an engineering or physical contradiction. Inventive Principles were extracted and formulated on the basis of extensive studies of diverse documents describing inventions (such as patents) and innovations.				
174	宏观层的发明原理 Inventive Principle at Macro-Level	未利用可提供所需结果的微观尺度上物质和场的特性的科学效应优势的一种应用发明原理的方法。 A method of applying an Inventive Principle without utilizing advantages of scientific effects which can be used to provide a result required by using properties of substances and fields at micro scale.			TRIZ 工具, TRIZ 知识库 TRIZ Tools, TRIZ Knowledge Bases	
175	微观层的发明原理 Inventive Principle at Micro-Level	利用可提供所需作用的微观尺度上物质和场的特性的科学效应优势的一种应用发明原理的方法。 A method of applying an inventive principle with utilizing advantages of scientific effects which can be used to provide an action required by using properties of substances and fields at micro scale.			TRIZ 工具, TRIZ 知识库 TRIZ Tools, TRIZ Knowledge Bases	
176	发明问题 Inventive Problem	当所有已知的解决方法都无法用来达成所需的结果时, 需要采取某种行动来创造一个新的技术系统以提供新的主要有用功能, 或改进现有技术系统提供的功能, 或防止技术系统或其产品受到有害内部或外部因素的			TRIZ 通述 General TRIZ	

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		<p>影响。同一发明性问题可由不同的发明性问题模型来表征。</p> <p>A situation which requires to perform a certain action either to create a new technical system to deliver a new main useful function, or to improve the function delivery by an existing technical system, or to prevent the technical system or its product from harmful internal or external factors in the situation when all known solution methods can not be applied to achieve the result required. The same inventive problem can be presented by different inventive problem models.</p>				
177	发明问题定义 Inventive Problem Definition	<p>文本描述（有时包括图形），提出与给定的发明情况有关的具体信息，并指出到底要改变什么，目标和限制。</p> <p>A textual description (sometimes including graphics) which presents specific information related to an inventive situation given and indicates what exactly has to be changed, a goal and constraints.</p>			TRIZ 通述, TRIZ 工具 General TRIZ, TRIZ Tools	
178	发明问题模型 Inventive Problem Model	<p>一种模型，其只包含使用特定的 TRIZ 问题解决工具进一步解决该问题时必不可少的组件。在 TRIZ 中，发明问题可被建模为技术矛盾或物理矛盾、不足或有害的物场模型、不足或有害功能的相互作用、及通用的技术功能。表征发明问题的模型常被用作发明问题定义的一部分。</p>			TRIZ 通述, TRIZ 工具 General TRIZ, TRIZ Tools	

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		A model which only includes those components that are essential for further solving the problem with a specific TRIZ Problem Solving Tool. In TRIZ, inventive problems can be modeled as technical or physical contradictions, inefficient or harmful Su-Fields, inefficient or harmful functional interactions, generic technical functions. A model that represents an inventive problem often is used as a part of Inventive Problem Definition.				
179	发明问题解决 Inventive Problem Solving	一个由若干步骤组成的过程，旨在为发明问题找寻发明性解决方案。 A process which consists of a number of steps to find an Inventive Solution to an Inventive Problem.			TRIZ 通述 General TRIZ	
180	发明过程 Inventive Process	将最初不明确的发明情境转化为具专利性方案想法（发明）描述的过程。 A process of transforming an initial ill-defined inventive situation to the description of a patentable solution idea (Invention).			TRIZ 通述 General TRIZ	
181	发明情境问卷 Inventive Situation Questionnaire	在启动一个描述和呈现发明情境的 TRIZ 过程之前，必须回答的通用的问题清单。这些问题旨在收集关于需求、目标、要求、限制以及现有解决方案的有用信息。 A list of generic questions which have to be answered before starting a TRIZ process to describe and present an inventive situation. The questions are aimed at collecting useful			TRIZ 通述 General TRIZ	

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		information about needs, goals, demands, constraints as well as about existing solutions.				
182	发明情境 Inventive Situation	一种情境, 其特征是出现满足特定超系统需求的需要, 但待解决的问题未被明确定义, 也没可选择的问题解决方向。 A situation which is featured by a presence of a need to satisfy a specific supersystem's demand without either a clearly defined problem to solve or a problem solving direction to be chosen.			TRIZ 通述 General TRIZ	
183	发明情境分析 Inventive Situation Analysis	将不明确的发明情境分解为一组目标、任务、发明问题的定义和约束条件的过程。 A process of decomposing an ill-defined inventive situation to a set of goals, tasks, inventive problems definitions, and constraints.			TRIZ 通述 General TRIZ	
184	发明性解决方案 Inventive Solution	对匹配发明要求的特定发明问题的解决方案。 A solution to a specific Inventive Problem that matches the requirements of invention.			TRIZ 通述 General TRIZ	
185	标准解 Inventive Standard	一种解决问题的方法, 其提出了如何把给定的物场模型转换到所需结果的规则。该规则的描述由两部分组成: 其左边部分呈现了一个现有而需改进的物场模型 (通用的问题模型), 其右边部分呈现了一个导入此种改进的物场模型 (通用的解决方案模型)。 A problem-solving method which proposes a rule presenting how to transform a Su-Field given to achieve the result required. The		一些标准解不包括物场模型图, 而是使用文字说明。 A number of Inventive Standards do not contain drawings of Su-Fields and use textual explanations instead.	TRIZ 工具, TRIZ 知识库 TRIZ Tools, TRIZ Knowledge Bases	

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		description of the rule consists of two parts: its left part presents an existing Su-Field that has to be improved (a generic model of a problem) and its right part presents a Su-Field that implements such an improvement (a generic model of a solution).				
186	解决变更的标准解 Inventive Standards for Change	<p>一组标准解，其提出了解决变更型发明问题的方法，而此些变更型发明问题要求改进技术系统的性能或质量，增加新的特性，或消除有害的影响。</p> <p>A group of Inventive Standards which propose methods of solving Inventive Problems of Change that require to improve performance or quality of a technical system, to add a new feature, or to eliminate a negative effect.</p>		对系统修改的规范标准 Standards for system modification	物场分析，标准解 Substance-Field Analysis, Inventive Standards	
187	测量和检测的标准解 Inventive Standards for Measurement and Detection	<p>一组标准解，其提出了解决测量和检测的发明性问题的方法，而此些测量和检测的发明问题要求测量特定参数的值或检测某个部件的特定属性在某个时刻的变化。</p> <p>A group of Inventive Standards which propose methods of solving Inventive Problems of Measurement and Detection that require to measure value of a specific parameter or detect a change of a specific attribute of a component at a moment given.</p>			物场分析，标准解 Substance-Field Analysis, Inventive Standards	
188	标准解应用的标准解 Inventive Standards on Application of Inventive Standards	<p>一组标准解，其提出了加强使用变更型标准解或测量和检测的标准解的方法，或在问题限制不允许使用上述标准解时而使用此类标准解的方法。</p>			物场分析，标准解 Substance-Field Analysis, Inventive Standards	



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		A group of Inventive Standards which propose methods of enhancing the use of Inventive Standards of Change or Inventive Standards of Measurement and Detection, or to use these Inventive Standards when the problem constraints do not allow their use.				
189	关键缺点 Key Disadvantage	为达成项目目标，需要消除的缺点。通常情况下，关键缺点出现在因果链的末端。 A disadvantage to be eliminated to achieve the project goal. Usually, Key Disadvantages appear at the root of a Cause-Effect Chain.				
190	关键问题 Key Problem	为在规定的约束条件下达成项目目标而需要解决的问题。 A problem to be solved to achieve project goals within the specified constraints.			TRIZ 工具 TRIZ Tools	
191	关键问题分析 Key Problem Analysis	一种分析的方法和工具，先在问题识别阶段识别出所有关键问题，并从中剔除多余的关键问题，而后识别无关紧要的关键问题，最终将无关紧要的问题分类为基于功能或基于矛盾的问题。 An analytical method and a tool that first eliminates redundant Key Problems from all the Key Problems identified during the Problem Identification stage, then identifies trivial Key Problems and, finally, classifies non-trivial problems as function- or contradiction-based.			TRIZ 工具 TRIZ Tools	
192	技术系统进化法则 Laws of Technical	其是由 TRIZ 创始人 G.Altshuller 提出的首创且仍在使用的术语，用于表示一些支配所有		因为缺乏技术系统进化法则在某些情况下对所有技术系统都有效	技术系统进化趋势 Trends of Technical	

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	Systems Evolution	<p>技术系统进化的通用模式、趋势和路线。</p> <p>Original and still in use term originated by the founder of TRIZ G. Altshuller to present a number of common generic patterns, trends and lines which govern evolution of all technical systems.</p>		<p>且没有例外的确切的统计证据，故这个词后来开始被 "技术系统进化趋势" 所取代。</p> <p>Later the term started to be replaced with the term "Trends of Technical Systems Evolution" due to the lack of exact statistical proof that the laws of technical systems evolution are valid for all technical systems under certain circumstances without exception.</p>	Systems Evolution	
193	发明等级 Level of Invention	<p>一种对发明性解决方案无量纲的定性度量，其根据产生此种解决方案所需的估算的试验次数以及其对科技和工程总体进化的贡献程度来评价。</p> <p>A dimensionless qualitative measure which evaluates an inventive solution according to an estimated number of trials necessary to produce such the solution and the degree of its contribution to the general evolution of technology and engineering.</p>		<p>目前已知有 5 个等级的发明：1) “非发明性发明”：非常简单的发明，不会对技术系统的进化产生任何重大影响，2) 通过在发明问题所属的狭窄工程领域中可用的方法解决技术矛盾而产生的发明；3) 通过在工程领域中已知的方法解决复杂的技术矛盾而产生的发明；4) 通过在不同的工程领域中可得的方法解决技术矛盾而产生的发明；5) 处理复杂的发明情境并开启一个崭新的科技领域的开创性发明。</p> <p>Currently 5 levels of inventions are known: 1) "Non-inventive invention": very simple invention that does not produce any significant impact on the evolution</p>	TRIZ 通述 General TRIZ	

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				of a technical system, 2) Invention that emerges from resolving a technical contradiction by a method available in the narrow engineering domain where the invention belongs to, 3) Invention that emerges from resolving a complex technical contradiction by a method known in the engineering domain given, 4) Invention that emerges from resolving a technical contradiction by a method available in a different engineering domain; 5) Pioneering invention that deals with complex inventive situations and which launches a radically new technology area.		
194	有用功能的水平 Level of Useful Function Performance	功能参数的实际值和所需值之间的比值。若实际值高于所需值，则此水平是过量的。若实际值低于所需值，则此水平是不足的。若实际值等于所需值，则此水平是正常的。 The ratio between the actual and required values of the function parameter. If the actual value is higher than the required value, the level is excessive. If the actual value is lower than the required value, the level is insufficient. If the actual value is equal to the required value, the level is normal.			功能分析与建模 Function Analysis and Modeling	
195	创造性性格的人生战略	一个研究领域，它探讨已知的具有创造性的			创造性个体发展理	

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	Life Strategy of Creative Personality	<p>人物传记，以提炼出具体的模式，而此些模式指出一个具有创造性的人如何解决所有类型的个人问题和社会问题，以及一个具有创造性的人在他或她的一生中遵循什么路径以实现他或她的目标。</p> <p>A field of study which explores biographies of known creative persons to extract specific patterns indicating how a creative person solves all types of personal and social problems and what path a creative person follows during his or her lifetime to achieve his or her goals.</p>			<p>论</p> <p>Theory of Creative Individual Development</p>	
196	技术系统进化路线 Line of Technical Systems Evolution	<p>呈现进化大方向的路线，其显示了一个技术系统或其某部分于其的进化时根据特定准则所经历的一些具体的、不相互矛盾的连续转变。</p> <p>A line presenting a general direction of evolution which shows a number of specific non-contradictory successive transformations a technical system or its part passes through during its evolution according to a specific criterion.</p>		<p>一些技术系统进化趋势可以包括几个具体的进化路线。</p> <p>Some Trends of Technical Systems Evolution can include several specific lines of evolution.</p>	<p>技术系统进化趋势</p> <p>Trends of Technical Systems Evolution</p>	
197	技术系统进化路线集 Lines of Technical Systems Evolution	<p>技术系统进化路线的集合，汇集了属于相对应技术系统进化趋势的所有技术系统进化路线。技术系统进化路线中的每一个转变都以特定的进化模式呈现。</p> <p>A collection of the Lines of Technical Systems Evolution which brings together all the Lines of Technical Systems Evolution that belong to</p>				

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		corresponding Trends of Technical Systems Evolution. Each transformation in the Line of Technical Systems Evolution is presented as a specific Evolution Pattern.				
198	宏观等级 Macro-Level	一个选定的组件或技术系统所属的超系统。 A supersystem where a selected component or a technical system belongs to.		术语 "宏观等级" 可以有两种含义。1) 表示一个超系统, 2) 表示在宏观尺度上产生变化的事实 (不使用粒子或场)。 The term "Macro-Level" can have two meanings: 1) Indication of a supersystem, 2) Indication of the fact that changes are produced at macro scale, without the use of particles or fields.	技术系统进化趋势 Trends of Technical Systems Evolution	