Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
1	*Marenco Swisshelicopter*			**General** After the careful study of the paper it is not obvious which reasons lead EASA to implement such a certification memorandum, under the light, that engine failures are a very rare accident cause. FAA with a proper accident statistics in the background comes to a completely different evaluation of the risks caused by the engine in helicopters. If the countries in Europe would implement a minimum standard for accident and incident reporting over their national accident investigations offices, and if this standard would include minimum standards for an effective classification of this accidents not only engine incidents would be covered. In that case EASA would get for the future a database which would enable EASA, to base their rules and laws on facts and review the effectivity of their actions. In contrary the actual certification memorandum tries to finalize the already extremely expensive and unnecessary requirements (e.g. requirement for twin engine helicopter for certain operations, restrictions for single engine helicopters operations) put in place by EASA because of an incorrect risk evaluation.				Not accepted	<u>Clarifications on the scope and objective of EASA CM-PIFS-011</u> It is recognised that engine failures rarely constitute the unique cause of an accident. However, when combined with unfavourable operational conditions, they sometimes results in emergency landing and, in the worst cases, accidents. CM-PIFS-011 provides guidance to 21.A.3A and 21.A.3B for determination of unsafe condition related to the risk of engine IFSD and power loss, for both single-and multi-engine rotorcraft. It proposes to base the determination of unsafe condition on rates and consequences of IFSD caused by engine or rotorcraft defects. CM-PIFS-011 is not a new requirement (see also general scope of a CM laid out on the cover page of all CMs). It documents and clarifies current practice. It will ensure consistency for EASA and Type Certificate Holders (TCH) in the process of determination of unsafe condition, therefore maintaining a high level of safety in relation to engine IFSD. CM-PIFS-011 does not deal with all unsafe conditions on rotorcraft. It only deals with contribution of engine IFSD. CM-PIFS-011 does not directly address the operational contributors to incidents/accidents. It accounts for operational aspects in maintaining acceptable IFSD rates due to engine or rotorcraft defects. Although no change on the purpose and scope is deemed needed, an additional note has been added at the end of paragraph 1.1 of the 'final' CM to further clarify this aspect. <u>Occurrence reporting</u> Occurrence reporting is one of the safety tools that enables the management of safety for aviation organisations and States. This fact is acknowledged and developed in the European Regulatory framework through the Reg (EC) 216/2008 and the Reg (EU) 376/2014. Reg (EU) 376/2014 is complemented by the Commission Implementing Regulation (EU) 2015/1018 laying down a list classifying occurrences in civil aviation to be mandatorily reported. Further information on collection, storage, protection, exchange, dissemination and analysis of occurrences, which enables EASA to take appropriate safety action, can be found here: http://easa.europa.eu/easa-and-you/safety-management/occurrence-reporting

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
2	*Marenco Swisshelicopter*			**The residual risk for an engine failure** As stated in clause 2 of the memorandum there is a residual risk of an engine failure with all the current rules in place. However it is not understood how this risk is taken as the basis to justify actions to be taken by the OEM's. This said and in spite of this fact, we do not yet know whether the already implemented rules will have a positive impact on the risk caused by an engine loss of power and the CM fails to capture how much the residual risk can be reduced with this foreseen action. For example in the United States and most other parts of the world, in and outside EASA, there is no requirement or provision for owners or operators of small privately owned aircraft to report annual usage and therefore there is no viable data for the majority of the fleet. In addition there is a large number of helicopter operating in countries where there is little or no regulatory oversight or accident/incident reporting. Additionally in many countries even commercial air transportation (CAT) with helicopters is not closely regulated. Also what limited IFSD data is available is inconclusive as it is unknown if this was the result of an actual engine failure or some other reason such as fuel exhaustion, fuel mismanagement, fuel contamination, improper maintenance, etc. In conclusion the industry already realizes we will never be able to see a possible improvement about the already implemented rules and EASA will never be able to give an indication about possible improvement as there is no reliable accident/incident database available which describes the actual status. We know from available statistical data that over 70% of the accidents are caused by pilots, we know that less than 10% of the accidents have a technical reason. In Switzerland, and this is true for nearly all countries with an accident statistics, more accidents are caused by autorotation training then accident resulting from actual engine loss of power. There is also a strong possibility of unreported pre-damages or damages on engines through the training of single engine emergencies, also on older twin helicopters without a training mode that impact engine reliability and loss of power.				Partially accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and Occurrence reporting. Obligations for the Operators to collect and report flight hours Reg (EU) 965/2012 [PART-CAT] - Subpart B - Operating Procedures - Section 1 - Motor-powered aircraft, CAT.OP.MPA.315 Flight hours reporting – helicopters, requires: *The operator shall make available to the competent authority the hours flown for each helicopter operated during the previous calendar year.* Difficulties for the TCH in actual collection of data EASA recognises that the TCH may face difficulties in data collection. Practical examples are, but not limited to, flight hours, which are not required to be directly reported to the TCH, or data from no-EU operators. TCH should therefore make their best efforts to collect the relevant data. When performing their risk assessment, TCH should therefore inform EASA of the assumptions and limitations associated with the collection of data. This is clarified in the 'final' CM in Note (@@) to Table 2 "Tasks of Engine TC Holder and Rotorcraft TC Holder, to be shared with EASA".

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
3	*Marenco Swisshelicopter*			**Data collection by the TC holder of the engine and the helicopter** It may initially appear as a viable process to require the data collection/analysis to the TC holders of the helicopter and the engine. But in practice there are several concerns how this model can work as there is no obligation for the operator to discuss his potential engine problems with the OEM as long as the problems does not cause technical damage or impact warranties. In fact it is known that most operators do not share these types of issues with either the airframe or engine OEM's unless they can get them to pay for repairs. And even if there is a maintenance effort involved, the information flow is as previously stated not guaranteed. In most all cases, operators see no reason to work together with the OEM when he has to pay for the damages or the problem was caused by his action. Therefore, how can an OEM ensure that he knows over the whole delivered fleet with which customer a helicopter is operated and maintained? How should he enforce the operator to deliver him the necessary data? Even if there is a small probability that the information might be somewhere available and the customer will contact the OEM's, we do not see straightforward way for the necessary data flow. Especially in light of the fact that the OEM does not only need the data about incidents they also need overall information's about the fleet usage, etc. in order to prepare the necessary assessment and evaluations on a proper database. From the paper we cannot recognize whether the data collection should be implemented only for EASA Member States or should cover all delivered aircrafts and or engines from all the TC holders. From practicability we assume the data collection effort is meant to be made on aircrafts operated in EASA Member States. This on the other hand can lead to incorrect conclusions because the data collected is not in every case representative of the worldwide fleet and will cause additional problems for the OEM's to make an accurate assessment.				Partially accepted	EASA also reminds the Obligations of the TCH in Part 21.A.3A : EU Reg 748/2012, Part 21.A.3.A requires (extracts): *(a) System for Collection, Investigation and Analysis of Data* *The holder of a type-certificate… shall **have a system for collecting, investigating and analysing reports** of and information related to **failures, malfunctions, defects** or other occurrences... **Information about this system shall be made available to all known operators of the product**..."* *(b) Reporting to the Agency* *The holder of a type-certificate… shall **report to the Agency any failure, malfunction, defect** or other occurrence of which it is aware… and **which has resulted in or may result in an unsafe condition**.* *(c) Investigation of Reported Occurrences* *…the holder of the type-certificate… shall investigate the reason for the deficiency and report to the Agency the results of its investigation and any action it is taking or proposes to take to correct that deficiency.* See also EASA response to Comment 1 (Occurrence reporting) and Comment 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data) and the associated change in the CM text.

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
4	*Marenco Swisshelicopter*			**Commensurability of the foreseen data collection** On the helicopter fielded in EASA Member states, and with no dependable statistical data available to determine how large the risk is, creates a disparity with the implementation of the planned action. To cover this requirement on the OEM and EASA side major resources will be necessary. The implementation will be only possible with significant costs per helicopter. This can be underlined with the fact that it is highly questionable that the actions will have a positive effect on the safety, purely out of the fact, that engine failures do not play a significant role in the statistics.				Not accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and (Occurrence reporting), EASA response to Comment Nr 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data), and EASA response to Comment 3 Obligations of the TCH in Part 21.A.3A.
5	*Marenco Swisshelicopter*			**Alternatives** Basically EASA has the possibility to implement a more efficient system to gather the necessary data since in many places as they have established accident investigation offices. Combined with the collection of flight time data it would be possible to establish a database which would not only cover engine data it would also cover all the other aspects of helicopter operation which causes accidents or loss of engine power. This would enable EASA to implement rules based on facts and known risk, and then to evaluate the risks following the implementation of a new rule. A more specific rule implementation process would avoid a situation where the aviation world is flooded by rules which more and more are not accepted by the involved people and lead to a situation where many people have concluded there is no safety or economic advantage to working with the authorities.				Not accepted	See EASA responses to Comments Nr 1, 2 and 3.
6	*Marenco Swisshelicopter*			**Conclusion** We do not see that the planned implementation will have a positive impact on safety, we do not see how in practice the proposed model should work if one wants to get reliable and meaningful data. It is not visible on which database EASA plans to implement this rules and how the implementation later should be evaluated. We see that the implementation will consume large resources on all sides and cause significant costs which stand against meaningful result. We see				Not accepted	See EASA responses to Comments Nr 1, 2 and 3. It is also to be noted that EASA organised an open session dedicated to the proposed CM-PIFS-011, as a "breakout" to the 9th EASA Rotorcraft Symposium held on 1st December 2015 in Cologne. In this session Industry had the opportunity to explain their concerns and EASA clarified some of the related elements of the CM. The outcomes of this session have been incorporated in the relevant sections of this CRD.

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
				much better alternatives to improve safety in helicopter operation and enable EASA to rule on facts instead on assumptions. For all the above reasons Marenco Swisshelicopter is completely against the proposed Certification Memorandum in its present state. We would like to see steps taken into a direction where we create more specific and lighter rules in EASA and we would like to see EASA moving from an organisation that hinders flying and innovation to an organisation that enables innovative solutions to improve safety in flying. We are certain that better solutions which would covers a more global approach to improve safety are possible and we are willing to work on such solutions if EASA is open enough to go into more innovative and efficient rules and solutions on their side. In light of the above and concerns voiced by other OEM's, EASA has the responsibility to stop the implementation of the proposed CM until the industry and other worldwide authorities can work together to implement a meaningful overall helicopter safety based process.					
7	*Rolls-Royce North America*	3.1, Table	10	TC holders (both A/C and engine) regularly collect and monitor IFSD data for their products. However, there is no operational requirement within most States of Registry requiring the Operator to report event data and hour/cycle data back to the TC holder.	Confirm within the Certification Memorandum that the event reporting requirements are for only those events which the TC holder is "aware" and that the risk assessments may need to be adjusted or approximated depending on the availability of data reported back to the TC holder (e.g. events, hours, cycles).	YES	NO	Partially accepted	See EASA response to Comment Nr 2.
8	*Rolls-Royce North America*	3.1, Table	10	Global rates for the rotorcraft (task 5a))is defined as "all events and rates". These rates are then assumed to include events attributed to improper maintenance and/or improper operation in addition to those attributed to the A/C or engine design approval. Since the TC holder has limited or no ability of influencing events attributed to maintenance and operation (or PMA parts for that matter), should the "proposed rate limit" and "watch rates" be exclusive or inclusive of these types?	Add additional clarification regarding whether proposed rate limits and watch rates are exclusive or inclusive of events which are not attributable to the A/C or engine TC holder.	YES	NO	Partially accepted	The definitions of 'defects', 'engine defects', 'rotorcraft defects', 'global rates', 'individual rates' and 'watch' rates are further clarified in the beginning of section 3.1 of the CM.
9	*Rolls-Royce North America*	3.2	13	It is unclear whether this Certification Memorandum (CM) affects only those TC holders where EASA is the Certifying Authority (CA), or whether it applies also to those TC holders where EASA is the Validating Authority (VA). Continued Airworthiness activities such as	Clarify what the expectations are for data sharing and reporting for those TC holders where EASA is not the State of Design (Certifying Authority), including any coordination requirements between the	YES	NO	Partially accepted	By definition, the CM affects any holder of a rotorcraft or engine EASA TC. However Bilateral Agreements (BA) in force, such as, but not limited to, EU-US and EU-Canada, supersede the requirements of Part 21. In the frame of these BA, EASA relies to the most extent possible on the Certifying Authorities (CA) for Continued Airworthiness (CAW) activities. In case of conflict,

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NR	Author	Section, table, figure	Page						
				reporting are normally managed by the CA and not the VA. The Technical Implementation Procedures between the FAA and EASA (for example) does include provisions that allow the VA to receive safety data such as that which is detailed within this CM, however, that data is to be communicated between the CA and the VA, and only upon request.	Certifying Authority and the Validating Authority.				these BA and their associated Technical Implementation Procedures (TIP) take precedence over the guidance of this CM. This is clarified in the modified Section 3.2 of the 'final' CM 'Who this CM affects'. In some cases the CA may not "formally" identify unsafe conditions as EASA would do in accordance with the CM, and the CA may not issue a corresponding AD. However, EASA expects the corrective actions to be implemented by the TCH and monitored by the CA with the same efficiency, and shared with EASA when necessary. See also EASA responses to Comments Nr 1, 2 and 3.
10	*Robinson Helicopter Company*			Robinson Helicopter Company has reviewed the proposed Certification Memorandum and recommends that it not be published. The Certification Memorandum represents an expansion of the requirements of 21.A.3A significantly beyond the original intent. The expanded requirements for statistical data to be provided to EASA by manufacturers is beyond the capability of manufacturers to determine. Furthermore, it is Robinson's opinion that the operational regulations the proposed CM is intended to support are flawed and should be reconsidered. The requirement of 21.A.3A(b) is for manufacturers to report to EASA any failure, malfunction, or defect of which it is aware, that created or may create an unsafe condition. There is a recognition in the regulation that manufacturers may not be aware of all failures, malfunctions or defects as manufacturers have no means of compelling operators or maintenance organizations to provide this information. The policy detailed in section 3.1 of the proposed CM requires manufacturers to assess rates of engine IFSD or power loss and providing this data to EASA. For this data to be meaningful, the manufacturer would need both a comprehensive record of all IFSD and power loss events and total fleet flight hours. Manufacturers have no means of compelling operators to provide flight hour information that would allow a determination of total fleet flight hours.				Not accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and (Occurrence reporting), EASA response to Comment Nr 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data), and EASA response to Comment 3 Obligations of the TCH in Part 21.A.3A. See also EASA response to Comment Nr 9 related to TCH where EASA is not the State of Design (Certifying Authority).
11	*Robinson Helicopter Company*			The following are additional technical problems with the CM:				Partially accepted	11.1. EASA agrees to remove direct reference to CS 27/29.1309. Instead reference will be made to CS 27/29.901 Installation. It should also be noted that, in practice, compliance with CS 27/29.901 is usually carried out with the use of "1309" safety

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
				1. The references to 27.1309(a) within the CM do not make sense. The relevant guidance of AMC 27 General (AC27-1B) for 27.1309(a) shows that this regulation relates to environmental qualifications of required equipment and is not relevant to engines or engine reliability. 2. EASA regulations 21.A.3A state that a TC holder is only required to report a malfunction or failure that has or may result in an unsafe condition (i.e. hazardous or catastrophic failure mode). The CM appears to require keeping of records and reporting to EASA malfunctions or failures of a lower consequence on safety. 3. According to the TIP for the FAA-EASA bilateral agreement, communication of issues relating to continued airworthiness is agency to agency. We have interpreted this to mean that the FAA is responsible for passing on to EASA the 21.3 reports we provide to the FAA. The CM should take bilateral agreements into account and must avoid conflicts.					analyses techniques. Section 2.1 of the 'final' CM is modified accordingly. 11.2 & 11.3. EASA disagrees. See EASA responses to Comments Nr 1, 2, 3 and 4.
12	*Robinson Helicopter Company*			The following are additional comments on the overall EASA approach to operational requirements the proposed CM is intended to support: 1. The proposed CM only applies to turbine-engine powered rotorcraft since the regulations limit operations over hostile or congested areas to turbine-powered helicopter. However it appears the intent of the regulations and guidance is to base the regulation of helicopter operations over hostile or congested area on the level of risk associated with a loss of engine power. There is no rational reason for excluding piston engine powered helicopters from these operations because of a perception of low reliability if the requirements include a minimum level of engine reliability. 2. If operational regulations are based on risk, it is not rational to limit the assessment of risk to that of a loss of engine power. There are many other parts on a helicopter that have the potential to create an unsafe condition when they fail. 3. In general, the number of cases of engine power loss unrelated to how the engine is maintained or operated is extremely small. Furthermore the specific details of an engine				Partially accepted	12.1 EASA partially agrees. For the scope and objective of the CM, see EASA response to Comment Nr 1. EASA agrees that, even though some adjustments may be needed to reflect their specificities, the principles of the CM should also be applied to non-turbine engines. This is clarified in the modified Section 3.2 of the 'final' CM 'Who this CM affects'. 12.2 For the scope and objective of the CM, see EASA response to Comment Nr 1. 12.3 EASA disagrees. Refer to paragraph.2 Background of the CM, and, for the scope and objective of the CM, EASA response to Comment Nr 1. Application of service bulletins may not be fully implemented across the fleet if not mandated by an AD.

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
				installation will typically be a contributing factor to a failures unrelated to maintenance or operational issues. Finally, if a design deficiency is identified in a power loss incident, it will typically be corrected immediately through a design revision and service bulletin. Together, these realities make engine reliability statistics meaningless.					
13	*Robinson Helicopter Company*			In conclusion, the proposed CM contains a number of technical errors, is impractical to implement, and supports a flawed approach to operational safety. Robinson Helicopter Company recommends the proposed CM not be published.				Not accepted	See EASA responses to Comments Nr 6, 10, 11 and 12. EASA has however improved the CM based on the comments received and on the results of the dedicated session held with Industry representatives.
14	*TURBOMECA*	general	general	The required coordination between aircraft manufacturer and engine manufacturer operates if both entities own a DOA from EASA. The present certification memo might be difficult to apply for a European engine manufacturer in coordination with a non-European aircraft manufacturer.	Precise in the Certification Memo what should be the process to be applied if the aircraft manufacturer does not own a DOA from EASA	no	yes	Partially accepted	Whether they hold an EASA DOA or not, EU and non-EU engine and rotorcraft TCH should already cooperate to fulfil their Part 21 (or equivalent) obligations. Their CAW processes should be compatible, and include assessments of rates and consequences or engine IFSD and power losses. See also EASA response to Comment Nr 9 related to TC holders where EASA is not the State of Design (Certifying Authority), and the clarification in the modified Section 3.2 of the 'final' CM 'Who this CM affects'.
15	*TURBOMECA*	§ 1.1	3	The introduction leaves the impression that TC holders would be the sole responsible for unsafe situations consecutive to IFSD's. Whereas in reality, helicopter and engine are designed and certified with an acceptable rate of IFSD's, and unsafe conditions are supposed to be prevented by a good control of operational conditions, training , etc.	Remind in § 1.1 that, in addition to the operational precautions to be applied by the operators (reference TBD), this CM defines the contribution of TC holders to keep control over the IFSD rates and their effects.	no	yes	Not accepted	The CM is deemed sufficiently explicit. See also EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011), and the additional Note at the end of Section 1.1 of the 'final' CM.
16	*TURBOMECA*	§ 3.1, Table, item 5. a)	10	There is no distinction between uncommanded and commanded engine In-Flight Shutdown in the Certification Memo. Given that the operational risk is significantly different, we think that only the uncommanded engine In-Flight Shutdown is to be considered in the Certification Memo. In addition, there is no definition of an engine power loss.	In order to address these both comments, it is proposed to use the definition of sudden in-service power loss provided in the EASA AIR-OPS Regulation, AMC1 CAT.POL.H.305(b), § (e)(3): "*Definition of 'sudden in-service power loss':* *(i) Larger than 30 % of the take-off power;* *(ii) Occurring during operation* (iii) *(iii) without the occurrence of an early intelligible warning to inform and give sufficient time for the*	no	yes	Partially accepted	EASA agrees that uncommanded IFSD pose a higher risk to rotorcraft safety than IFSD commanded by the pilot. A reference to AMC1 CAT.POL.H.305(b), paragraph (e)(3) 'sudden in-service power loss', is included in the beginning of section 3.1 of the 'final' CM, definition of 'Engine IFSD and power loss'. However commanded IFSD should also be jointly monitored and assessed by the engine and rotorcraft TCH. As examples in some cases, following the commanded IFSD, safe flight and landing may not be ensured. In other cases, the investigation may reveal that a failure that triggered the commanded IFSD may have resulted in an uncommanded IFSD or power loss under other conditions. This remark is also included in the beginning of section 3.1 of the 'final' CM, definition of 'Engine IFSD and power loss'.

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
					pilot to take any appropriate action." This definition would indirectly include uncommanded IFSD's and exclude most commanded IFSD's Using this definition would also provide simplification and more clarity by using same terminology and data for continued airworthiness and CAT-POL-H indicators				
17	*TURBOMECA*	§ 3.1, Table, item 7. a)	11	It is written in the Certification Memo that global rates and trends are to be shared with EASA , at regular intervals, normally not to exceed every 6 months, unless justified otherwise e.g. by the characteristics of the fleets. Global rates and trends regarding power loss are already yearly shared with EASA through Air Operations (CAT.POL.H) regulation requirements.	The current process relating to Air Operations (CAT.POL.H) regulation requires a yearly analysis. In order to keep a global coherence and avoid a supplemental workload, it is proposed to replace "not to exceed 6 months" by the same criteria as CAT.POL.H.	no	yes	Accepted	EASA agrees to extend the reporting of rates to a 'not-to-exceed' 12-month interval. In the 'final CM', Section 3.1, Table 2, Step 7.a) is modified accordingly.
18	*TURBOMECA*	§ 3.1 Figure 1	11	The term 'Increased criticality' could be wrongly interpreted.	It is proposed to replace the terms 'increased criticality' by 'increased risk'.	yes	no	Accepted	EASA agrees. In the 'final' CM, Section 3.1, Table 2, Step 6.b) and Figure 1 are modified accordingly.
19	*TURBOMECA*	§ 3.1, Table, item 7. b) and Figure 1	11	In case of defined corrective actions involving redesign or new parts, for Multi-engine helicopters, it could be difficult to evaluate the number of helicopter operating in PC1 or PC2 or PC3.	It is proposed to add, in the Certification Memo, that for corrective actions involving redesign or new parts on multi-engine helicopters, the differentiation of these corrective actions versus operations in PC1 or in PC2 or in PC3 is conditioned by the ability of the TCH to evaluate the operating hours per category of operation.	no	yes	Partially accepted	EASA acknowledges the difficulties for the TCH to collect reliable operational data. See also EASA response to Comment Nr 2, and modified Note (@@) to Table 2 "Tasks of Engine TC Holder and Rotorcraft TC Holder, to be shared with EASA" in the 'final' CM.
20	*Enstrom Helicopter Corporation*			In the United States there is no requirement for owners/operators of small, privately-owned aircraft to report the annual usage of their aircraft. Thus, there is no data for the majority of our fleet. In fact, responses to specific requests for usage data typically get about a 7% response. Based on this, we do not have data than can reliably or accurately support any type of "rate per flight hour". Without a specific regulatory mandate to report time in service, we (and the privately owned helicopter industry as a whole) will not realistically be able to support this requirement.				Not accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and (Occurrence reporting), EASA response to Comment Nr 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data), and EASA response to Comment 3 Obligations of the TCH in Part 21.A.3A. See also EASA response to Comment Nr 9 related to TC holders where EASA is not the State of Design (Certifying Authority).
21	*Enstrom Helicopter Corporation*			Paragraph 2.3 cites 21.A.3A as requiring the certificate holder to have a "system for collecting, investigating and analysing reports of				Not accepted	See EASA responses to Comments Nr 1, 2 and 3.

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NR	Author	Section, table, figure	Page						
				… failures, malfunctions, defects…". While we have a system for handling these data, we do not have an effective system of collecting general fleet-wide data, such as aircraft hours. To effectively collect this data would require a regulation, and we cannot, even as a certificate holder, create regulations. This is something which is, correctly so, reserved for the various governments and authorities of the individual countries. Thus, this CM seems to be tasking certificate holders with a responsibility which is reserved to the government.					
22	*Enstrom Helicopter Corporation*			This proposed CM does not seem to cover how EASA plans to handle IFSD's that occur before the fleet has reached 100,000 flight hours. This, no doubt, represents a large number of owners/operators. Without an understanding of how to handle in-flight shut-downs before the fleet reaches 100,000 hours, this policy will almost certainly raise questions that will be perceived as requiring immediate action without the guidance to cover it.				Partially accepted	EASA recognises that, for the early stages of entry into service, the limited number of engine and rotorcraft flight hours may result in less representative IFSD rates. This should be taken into account in the risk assessment to avoid excessive mandating of corrective actions. This is clarified in in the beginning of section 3.1 of the 'final' CM, definition of 'Rates'.
23	*Enstrom Helicopter Corporation*			The discussion of coverage for non-turbine engine rotorcraft is very vague. Publication of the CM presumably enables EASA carte blanche jurisdiction over non-turbine IFSD's with no guidance or requirement for standardization or consistency.				Partially accepted	See EASA response to Comment Nr 12 related to non-turbine engines.
24	*Enstrom Helicopter Corporation*			Finally, the supporting data in this certification memorandum does not address how many accidents would be expected to be avoided by strictly adhering to this process. While none of us believe that in-flight shut-downs are good or should be considered acceptable, there is no indication that would significantly reduce the number of accidents, and thus we do not know why there is an urgent need to implement this immediately.				Not accepted	See EASA response to Comment Nr 1, 2 and 3.
25	*Enstrom Helicopter Corporation*			Based on the above comments, we suggest this policy be tabled until it is brought before an industry working group or advisory committee.				Partially accepted	See EASA response to Comment Nr 6.
26	*Sikorsky Aircraft Corporation*			Section 2.2 of the policy proposal identifies the area of safety concern for IFSD as Performance Class 2 and Performance Class 3 operations particularly CAT. POL. H. 225/305/420 operations. However the policy proposed in 3.1				Not accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011).

Comment				Comment summary	Suggested resolution	Comment is an observation or is a suggestion	Comment is substantive or is an objection	EASA comment disposition	EASA response
NR	Author	Section, table, figure	Page						
				appears to be a requirement for any rotorcraft to satisfy Part 21 requirements, not limited to just performance class 2 or performance class 3 operations. Presently IFSD rate reporting is necessary for particular operations, such as CAT.POL.H.305, but the new policy appears to require it for any rotorcraft operation. This should be clarified.					
27	*Sikorsky Aircraft Corporation*			Part 21 requires the reporting of failures, malfunctions and defects, however there is no corresponding requirement to report aircraft or engine operating hours. Since there is no requirement, the quality of operating hour data can vary widely from very accurate automatic reporting to non-existent reporting and subjective estimate with very questionable accuracy. The new policy is based on assessment of IFSD rate, which is determined by both failure incident data and by operating hour data. Since there is no regulatory requirement for reporting of operating hour data, the quality of IFSD rate data is not consistent or assured. Therefore IFSD rate is a questionable basis for the proposed policy if there is no corresponding regulatory requirement for reporting of operating hours.				Partially accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and (Occurrence reporting), EASA response to Comment Nr 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data), and EASA response to Comment 3 Obligations of the TCH in Part 21.A.3A.
28	*Sikorsky Aircraft Corporation*			Section 3.1 of the policy proposal, Table item 7(a) proposes a 6 month interval for reporting of rates and trends. Aircraft operating hours tend to be seasonal and more heavily weighted to certain months of the year. Operator reporting of hours may be several months subsequent to hours incurred. Also, verification of engine failure versus other cause or non-representative use may take several months to establish. As such a 6 month reporting basis would typically result in skewed data and would be less accurate than an annual reporting basis where the data is more stabilized. Similarly Table item 7(b) proposes immediate notification as soon as rate limits for potentially unsafe conditions are reached. This should be based on stabilized average data rather than instantaneous “spikes” in the data which can also occur due to skewing of data in shorter sample periods.				Accepted	For global rates, see EASA response to Comment Nr 17. For individual rates, the sentence is completed as follow: ‘as soon as the rate limits for potential unsafe conditions are reached, or show a trend indicating that these limits may be reached in the future, unless justified otherwise by the characteristics of the data.’ Table 2 step 7.b) is changed accordingly in the ‘final’ CM.

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NR	Author	Section, table, figure	Page						
29	*Sikorsky Aircraft Corporation*			Section 3.1 of the policy proposal, Table item 7 proposes risk assessment activities to be done in conjunction with IFSD rate review of fielded engines and aircraft. However these assessment activities should largely have been accomplished during the aircraft safety analysis for aircraft type certification. It should be normative for aircraft safety analysis in development to conservatively account for the consequences of power loss on single engine and on all engines, and for the engine safety analysis to consider intended use of the installed engine. Therefore, this policy proposal appears to address the safety concern of engine power loss too late in the life cycle of the engine and aircraft; unless the intent is to address legacy aircraft that were not developed with adequate safety analysis or to check the assumptions of the original development safety analysis with fielded aircraft experience. An IFSD rate for potentially unsafe condition in fielded aircraft should be a rate from stabilized data that exceeds the engine power loss probability assumptions of the original aircraft type certification safety analysis.				Partially accepted	As specified in Table 2 step 5.c), the TCH should propose the rate/probability limits based on the potential consequences of IFSD. EASA acknowledges that they should be consistent with the assumptions taken during certification, but actual experience shows that this is not always the case. As the CM is currently limited to CAW, the 'final' CM is not changed based on this comment.
30	*Sikorsky Aircraft Corporation*			The need for this policy proposal indicates a deficiency in CS-E-510 (g) safety analysis requirement, which states that an engine failure in which the only consequence is partial or complete loss of thrust or power (and associated engine services) from the engine must be regarded as a Minor Engine Effect. A "minor" effect is normally defined (for example in FAA AC-29-2C) as a slight reduction in functional capabilities or safety margins. If rotorcraft engine power loss was of minor criticality in reality, it would not require AD's or this policy proposal to monitor IFSD rate. A criticality of "major" for power loss of one engine would be normative for rotorcraft aircraft level safety analysis. This is reflected in the 1 per 100,000 engine hour power loss rate required for CAT.POL.H.305. Also for many twin engine rotorcraft, the safety analysis does not consider loss of power on all engines to be "continued safe flight and landing" and therefore the aircraft safety design must satisfy the extremely improbable possibility of				Noted	The classification of an engine failure in which the only consequence is partial or complete loss of thrust or power is established 'at engine level' in CS-E 510 (g). Reviewing the adequacy, and potentially amending this specification would require a dedicated rulemaking activity. However, as the CM is currently limited to CAW, the 'final' CM is not changed based on this comment.

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NR	Author	Section, table, figure	Page						
				complete power loss occurring. This would translate to 10E-9 dual engine failure rate and align with 10E-5 single engine failure rate. If CS-E-510 specified major as normative for rotorcraft engine power loss, the engine safety analysis and engine safety design would be much better aligned with the rotorcraft safety requirements. We believe if the policy proposal focused more on the rigor of safety analysis for engine certification and intended use of the engine, it would show the classification of "minor" to be inadequate in most cases.					
31	*Sikorsky Aircraft Corporation*			It is not clear how this proposed policy would be conducted for aircraft certified by other national aviation authorities. For example with an FAA certification, the protocol would be for data and technical communication to EASA to be coordinated through the FAA. But the FAA does not have an equivalent IFSD rate reporting policy, so it is unclear how this data delivery would be managed.				Partially accepted	See EASA response to Comment Nr 9 related to TC holders where EASA is not the State of Design (Certifying Authority).
32	*Airbus Helicopters*		all	Airbus Helicopters would like to discuss the issue in greater depth with EASA at the opportunity of the upcoming EASA Rotorcraft Symposium (day before or after the Symposium) and request that the CM is not released until after this discussion.		Yes	No	Accepted	See EASA response to Comment Nr 6.
33	*Airbus Helicopters*	§ 3.1, Table, item 5. a)	10	In order to calculate the rate of engine power-loss, a definition of engine power loss is needed. No definition is provided.	It is proposed to use the definition of sudden in-service power loss provided in the EASA AIR-OPS Regulation, AMC1 CAT.POL.H.305(b), § (e)(3): "*Definition of 'sudden in-service power loss':* *(iv) Larger than 30 % of the take-off power;* *(v) Occurring during operation* (vi) *(iii) without the occurrence of an early intelligible warning to inform and give sufficient time for the pilot to take any appropriate action."*	no	yes	Partially accepted	See EASA response to Comment Nr 16.
34	*Airbus Helicopters*	§ 3.1, Table, item 5. c)	10	The rate of 10-6/FH for an individual engine or rotorcraft defect is not consistent with the certification requirements and is too demanding. It would raise significantly the	It is proposed to delete the criterion of a rate of 10-6/FH for an individual engine or rotorcraft defect.	no	yes	Not accepted	The rate of 10-6/FH is a "watch" rate, therefore only indicative, or for monitoring purpose. It is not a requirement,

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NR	Author	Section, table, figure	Page						
				number of 'unsafe events' without added safety value, taking into account that a good safety watching would be ensured by the10-5/FH global rate measured on a yearly basis.					and does not represent a criterion when action would always be required. However, as an improvement, further clarification is added in the definition of 'Watch rates' in the beginning of section 3.1 of the 'final' CM, and in Note (@@@) at the end of Table 2.
35	*Airbus Helicopters*	§ 3.1, Table, item 7. a)	11	It is written: "For global rates and trends, at regular intervals, normally not to exceed every 6 months, unless justified otherwise e.g. by the characteristics of the fleets."	The required period of 6 months for sharing data with EASA is not consistent with the requirement 'yearly rolling average rate' included in the § 3.1 Table, item 5.a) and also not consistent with the engine IFSD calculation currently made by TCHs in order to help their operators to comply with AMC1 CAT.POL.H.305(b), § (e)(2) (i) where it is required: " The following documentation should be updated every year: (i) The document with detailed methodology and calculation as distributed to the authority of the State of design." Consequently our proposal is to replace "not to exceed 6 months" by "not to exceed 12 months" in § 3.1, Table, item 7.a).	no	yes	Accepted	See EASA response to Comment Nr 17.
36	*Airbus Helicopters*	§ 3.1 Figure 1	11	The EU AIR-OPS Regulation 965/2012 does not regulate specifically single-engine helicopters but Performance Class 3.	It is proposed to use in Figure 1 the following 3 operations categories: - 'Multi-engine helicopter not operated in performance class 2 or 3' or 'Multi-engine helicopter operated in performance class 1', - Multi-engine helicopter operated in performance class 2, - Helicopters operated in performance class 3 (single engine helicopter or multi-engine helicopter)	yes	no	Partially accepted	The comment is accepted, but the specificity of operations with or without assured safe forced landing capability should be kept. Figure 1 is modified accordingly in the 'final' CM.
37	*Airbus Helicopters*	§ 3.1 Figure 1	11	The term 'Increased criticality' could be interpreted as a request to change the criticality levels in the risk analyses.	It is proposed to change the terms 'increased criticality' in 'increased risk'.	yes	no	Accepted	Figure 1 is modified accordingly in the 'final' CM.
38	*Airbus Helicopters*	§ 3.1, Table, item 7. b) and Figure 1	11	In case of defined corrective actions involving redesign or new parts, for Multi-engine helicopters, it could be difficult to evaluate the number of helicopter concerned in PC1 or PC2 or PC3.	It should be noted in the document that, for defined corrective actions involving redesign or new parts on multi-engine helicopters, the differentiation of these corrective actions versus operations in PC1 or in PC2 or in PC3 should be conditioned by the ability of the TCH to evaluate the number of helicopters concerned, and so	no	yes	Partially accepted	See EASA response to Comments Nr 2 & 19.

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NR	Author	Section, table, figure	Page						
					the number of engine hours, per kind of operation.				
39	*GAMA*	3.1, Table	10	TC holders (both A/C and engine) regularly collect and monitor IFSD data for their products. However, there is no operational requirement within most States of Registry requiring the Operator to report event data and hour/cycle data back to the TC holder.	Confirm within the Certification Memorandum that the event reporting requirements are for only those events which the TC holder is "aware" and that the risk assessments may need to be adjusted or approximated depending on the availability of data reported back to the TC holder (e.g. events, hours, cycles).	YES	NO	Partially accepted	See EASA response to Comment Nr 1 (Clarifications on the scope and objective of EASA CM-PIFS-011) and (Occurrence reporting), EASA response to Comment Nr 2 (Obligations for the Operators to collect and report flight hours) and (Difficulties for the TCH in actual collection of data), and EASA response to Comment 3 (Obligations of the TCH in Part 21.A.3A).
40	*GAMA*	3.1, Table	10	Global rates for the rotorcraft (task 5a))is defined as "all events and rates". These rates are then assumed to include events attributed to improper maintenance and/or improper operation in addition to those attributed to the A/C or engine design approval. Since the TC holder has limited or no ability of influencing events attributed to maintenance and operation (or PMA parts for that matter), should the "proposed rate limit" and "watch rates" be exclusive or inclusive of these types?	Add additional clarification regarding whether proposed rate limits and watch rates are exclusive or inclusive of events which are not attributable to the A/C or engine TC holder.	YES	NO	Partially accepted	The definitions of defects, engine defects, rotorcraft defects, individual rates, global rates, "watch" rates are further clarified in the beginning of section 3.1 of the 'final' CM.
41	*GAMA*	3.2	13	It is unclear whether this Certification Memorandum (CM) affects only those TC holders where EASA is the Certifying Authority (CA), or whether it applies also to those TC holders where EASA is the Validating Authority (VA). Continued Airworthiness activities such as reporting are normally managed by the CA and not the VA. The Technical Implementation Procedures between the FAA and EASA (for example) does include provisions that allow the VA to receive safety data such as that which is detailed within this CM, however, that data is to be communicated between the CA and the VA, and only upon request.	Clarify what the expectations are for data sharing and reporting for those TC holders where EASA is not the State of Design (Certifying Authority), including any coordination requirements between the Certifying Authority and the Validating Authority.	YES	NO	Partially accepted	See EASA response to Comment Nr 9 related to TC holders where EASA is not the State of Design (Certifying Authority).
42	*GAMA*	Task 7	11	Task #7 on page 11 talks about a formal process to regularly share data with EASA… Will this "formal" process we defined?		YES		Partially accepted	The process to regularly share data with EASA is part of the normal CAW process between the TC holder and his Certifying Authority. It is not the intention of the CM to define this process. See also EASA response to Comment Nr 9 related to TC holders where EASA is not the State of Design (Certifying Authority).
43	*GAMA*			We strongly object to this process only applying to rotorcraft with turbine engines. Specifically not including Non-turbine engine rotorcraft is excluding the population of rotorcraft that actually has an issue with IFSD rates. Unless that group of rotorcraft is on some other, more	Include non-turbine powered rotorcraft in the data collection.		YES	Partially accepted	See EASA response to Comment Nr 12.1.

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NR	Author	Section, table, figure	Page						
				restrictive reporting and review process that we are unaware of, EASA is unintentionally punishing the turbine operators under the guise of safety. They should be focusing on the population that has the problem.					
44	*GAMA*			Unless it is categorized what a true IFSD event is and, not pilot error, the results are completely out of our control regardless of how dependable our installed engine is or what corrective actions we take for defects. Need to define what a real IFSD is in order to eliminate the mistakes by pilots or maintainers being included in the rate calculation.			YES	Partially accepted	See EASA responses to Comment Nr 16 and 40.
45	*GAMA*			We request that EASA postpone implementation of the CM until after they have conducted an industry meeting on the subject in conjunction with the EASA Rotorcraft Symposium in Cologne on December 2-3, 2015.	"breakout session" to be held the day before the Symposium on December 1, 2015.		YES	Accepted	See EASA response to Comment Nr 6.