The Academy of Model Aeronautics (AMA) respectfully submits the following comments in response to the Federal Aviation Administration's Notice of Proposed Rulemaking (Dockett FAA-2019-1100) regarding Remote Identification of Unmanned Aircraft Systems (Remote ID). (stock language re AMA)

According to the NPRM, the FAA states that requiring Remote ID technologies would address safety, national security, and law enforcement concerns regarding further integration of these aircraft into the airspace of the United States. AMA members support the safe and secure operation of all UAS – commercial and recreational – in the national airspace system (NAS). For over 80 years, AMA member have been safety operating in the NAS – a fact repeatedly publicly acknowledged the FAA in multiple fora – and our members support the safe integration of new entrants into the airspace. However, the proposed rules do not improve the safety or security of model aircraft activities, but rather only impose unnecessary and costly regulations to the one part of the UAS community with existing safety and security standards.

Overview

Although AMA supports the overall goal of the NPRM, the failure of the proposed rule to distinguish between different kinds of operators and different types of UAS aircraft will result in tens of thousands of model aircraft hobbyists to lose access to the airspace and impose significant compliance costs on remaining hobbyists. Fundamentally, the FAA has failed to show how the proposed rules imposed on model aircraft operators flying Visual Line of Site (VLOS) will improve the safety or security of the NAS.

The NPRM fails to make the distinction the safety and security differences between VLOS operations and Beyond Visual Line of Site (BVLOS) operations. Rather than creation a set of rules that addresses the vastly different operational ability of recreational UASs, the proposed rule forces model aircraft that are designed and built to operate under VLOS to comply rules designed for UASs designed and built to operate BVLOS. The FAA is correct in stating that UAS are going to evolve and become more complex, but that is not the case for traditional model aircraft flying VLOS.

For those hobbyists who aircraft cannot meet the proposed rules technology mandates or simply cannot afford to comply, they will be regulated to a small number of fixed sites where non-Remote ID operations could occur. Although AMA has catalogued several thousand of our local clubs fixed flying sites, not every hobbyist has convenient access to a fixed site. The proposed rule states explicitly it expects the number of fixed sites to

decrease over time further limiting the modeling communities' access to the airspace. The NPRM does present any safety or security data to justify these significant limitations on the modeling communities' access to the airspace.

The NPRM incorrectly assumes that all recreational UAS operations will eventually become BLVOS at some point without providing any data to support that assertion. In fact, the NPRM's goal appears to be to drive the hobbyist community to BVLOS operations or face being regulated to an ever-diminishing number of fixed sites to conduct VLOS operations. For over 80 years, AMA members have been operations VLOS and that is not going to change. It is a core element of the hobbyist experience. AMA members only fly VLOS and the FAA fails to take account this crucial operational fact into account in this rulemaking.

The proposed rule is overly burdensome and costly for model aircraft hobbyists without providing the safety or security benefits that the FAA asserts. If enacted as proposed, the rule would preclude a child from flying a model aircraft in their neighborhood park unless equipped with Remote ID technology and paid connection to an approved network. The rule treats this child's afternoon in the park with a model aircraft they built from a kit as equivalent safety and security risk that a large commercial UAS flying BVLOS is.

The proposed rule grossly understates the costs of compliance and the benefits accrued to adoption of the rule. The reality is that the cost and requirements to fly a model aircraft will result in far fewer young people engaging in the hobby and ultimately in aviation. Nor, does the NPRM make clear what public safety or security benefit would be addressed by effectively prohibiting VLOS operations outside of fixed sites.

If enacted, these proposed rules would create a death spiral for the modeling community – a community that FAA has consistently cited as good users of the airspace, serves as a pipeline for the next generation of aviation enthusiasts, and will negate ability of community-based organizations to help the FAA educate the growing number of UAS operators.

Given that the safety and security of these vastly different type of operations needs to be recognized the final rule. AMA respectfully requests that the final rule exempts VLOS

operations from Remote ID requirements. If a blanket exemption is not provided, AMA believes that its members can address the safety and security concerns states in the NPRM far more cost-effectively and under a far less onerous regulatory environment as outlined below.

Two Separate Categories: Advanced Drones and Traditional Model Aircraft

Operational reality dictates that less advanced UAS that operate VLOS do not meet the same level of risk as far more advanced UASs capable of BVLOS. For the purpose of this document, unmanned aircraft with advanced capabilities will be referred to as advanced drones, and unmanned aircraft designed to only be flown within visual line-of-sight of the operator will be considered traditional model aircraft.[1] This distinction between traditional model aircraft and advanced drones was provided to the FAA by the Remote Identification and Tracking Aviation Rulemaking Committee, specifically Work Group Two, tasked to set a threshold of compliance. The that will operate BVLOS. Remote Identification is an appropriate requirement for these UASs. The final rule should accommodate the differences between these two UAS platforms in the final rule for remote ID.

UASs continue to get more technologically advanced allowing a variety of operations unthinkable even a few year ago. As the NPRM notes, these advances will enable many important public interest and commercial operations in the future. AMA recognizes the many potential uses of advanced UASs and in no way do our Members seek to hold back advances in UAS operations. However, model aircraft use the same basic radio technology that dates back decades to operate. (need a sentence that any changes have been basic – assume RF has gotten better). Model aircraft hobbyists will continue to use basic Radio Frequency to operate VLOS. (any blurb re limitations – cameras, etc that we discussed earlier)

The NPRM's failure to distinguish the significant technological differences between traditional model aircraft and advanced UASs cannot be understated when assessing both the safety and risk of UAS operations. It is not only a question of misidentifying risk, but also of misapplying a remedy to that risk.

In manned aviation, different types of manned operations come with different risk and different security protocols. AMA recognizes that the increased use of advanced UASs that can operate BVLOS pose new security challenges and risks. Not to disregard the few incidents cited by the NPRM but AMA would note that in each case, it is clearly an

[1] Traditional model aircraft require continuous input from the operator and are designed to only be flown within visual line of sight. Advanced drones, on the other hand, have the capability of sustained and controlled navigation beyond visual line of sight. This distinction between model aircraft and advanced drones was provided to the FAA by the Remote Identification and Tracking Aviation Rulemaking Committee, specifically Work Group Two, tasked to set a threshold of compliance. The FAA should accommodate the differences between these two UAS platforms in the final rule for remote ID.

advanced UAS creating the safety and security issue. AMA's own safety protocols would not allow these type operations.

The security regulations and requirements are different for commercial aviation, general aviation and from all-cargo operations. In commercial aviation, passengers are assessed at different risk levels. AMA believes risk assessment should reflect the technological differences between types of unmanned aircraft. The NPRM seeks only to address risk with a technological solution rather than an emphasis on the risk the operator poses – contrary to how manned aviation is treated. The operator of a model aircraft is easily identified given the technological limitations of the model they are operating. VLOS operations are inherently less risky as the operator of the UAS is operating in site of his model aircraft.

National security and the safety of our airspace is of the utmost important. AMA believes that the FAA, Department of Defense, Department of Homeland Security and other relevant agencies need to properly evaluate true risk between various unmanned aircraft platforms. AMA supports regulatory requirements for technologically advanced UASs that will operate BVLOS. Remote Identification is an appropriate requirement for these UASs.

Risk Assessment

AMA members using traditional model aircraft pose virtually no safety or security risk to the NAS. The NPRM provides no data to justify the mandates the NPRM imposes on traditional aircraft. While safety and security agencies and requested the capability to identify the users of advanced drones where a Remote ID mandate is justified, law enforcement has had little issue with users of traditional model aircraft. In fact, the traditional model aircraft community is often viewed as a resource for law enforcement and security agencies, being the first line of defense against those with ill intent.

The lack of a clear risk assessment has resulted in the proposed rule being overly burdensome on traditional model aviation. If AMA members were a risk, AMA is unaware of any government agency making that assertion or having data to justify it. AMA is unaware of any FAA or other governmental agency having conducted a risk assessment for recreational UAS in general or traditional model aviation specifically. The NPRM cites a few discrete instances of drones causing disruption to the NAS here or abroad. Otherwise, all the data in the NPRM is speculative or anecdotal. However, the benefits cited by the NPRM rely on preventing the costs to these potential events.

The NPRM references the FAA sightings reports and the need to "...distinguish compliant UAS users from those potentially posing a safety or security risk." This phrase is used repeatedly throughout the NPRM on Remote ID. The NPRM contains a a discussion

about the need for remote ID to enable counter UAS actions, but the references are all to individual incidents of individuals arrested for using advanced drones.

Given the significant costs of Remote ID compliance to the modeling community, the FAA should have conducted a more thorough risk and cost benefit analysis before imposing a technological mandate on traditional model aircraft. The risk factor of an advanced drone flying BVLOS is vastly different that a traditional model aircraft flying VLOS and the proposed rule makes no distinction between the two. The costs imposed on traditional model aircraft to comply with Remote ID are significant compared to advanced drones who software can be update remotely. The traditional modeler is still going to fly VLOS even with a Remote ID equipped model. There is no additional security benefit to law enforcement.

In the cost benefit section (See Table 6 below) they also mention the rationale for the "Safety and Security" benefits:

Table 6: Summary of Benefits of Proposed Rule

Safety and Security	• Provides situational awareness of UAS flying in the airspace of the United States to other aircraft in the vicinity of those operations and airport operators. • Provides information to distinguish compliant UAS users from those potentially posing a safety or security risk. • Enables the FAA, national security agencies, and law enforcement entities to obtain situational awareness of UAS in the airspace of the United States in near real-time. • Provides additional registration and notification requirements for identifying aircraft and promoting accountability and the safe and efficient use of the airspace of the United States.
Enables Expanded Operations and UAS Integration	• Assists in the implementation of operations of small UAS over people and at night. A final rule for operation of small UAS over people and at night is contingent upon a final action for UAS with remote identification being effective.[137]

[137] "Because these operations have a potential impact on public safety and national security, the FAA does not intend to promulgate a final rule to allow these operations until a regulation finalizes the requirements regarding

AMA will again point out that that a user of traditional model aircraft is going to be identifiable to any law enforcement or security personnel. A traditional model aircraft is limited in range. An operator engaging in unauthorized use of a traditional model aircraft would be easily identified – the goal of the Remote ID mandate.

The NPRM fails to justify the need for remote ID on all UAS platforms, regardless of capability with hard data. AMA believes that such data exists, it will help justify why the NPRM runs counter to the Remote Identification and Tracking Aviation Rulemaking Committee, specifically Work Group Two's recommendation of UAS platform distinction.

(don't fully understand this paragraph)

Exemption of Traditional Model Aircraft

Given the lack of hard data about what, if any, safety and security issues that traditional model aircraft pose to the NAS, the FAA cannot prove the benefits to the NAS from imposing Remote ID requirements. It is incumbent upon the agency to prove the costs and benefits to proposed rules. AMA believes that FAA has failed to do so in requiring Remote ID requirements for traditional model aircraft and thus should be exempted from them.

In addition to lack of associated risk data to justify a Remote ID mandate for traditional model aircraft, this proposed rule exceeds requirements for some manned aircraft who conceivably pose a higher risk to the safety and security of the NAS. If this proposed rule would be implemented as outlined in the NPRM, UAS users would be tasked with meeting more requirements than some experimental aircraft and ultralights. Given the payload, speed, and distance capabilities of manned aircraft greatly exceed traditional model aircraft and even many UASs, the lack of a risk analysis and graduated response is in the NPRM is even more glaring.

The NPRM is even more troubling to AMA as it does not comport to the many statements over the last 18 months from FAA staff regarding the risk traditional model aircraft pose to the NAS. For example, AMA participated in a Safety Risk Mitigation Panel where **AJT-- define** was the proponent for operations over 400' in uncontrolled and controlled airspace (B, C, D, and surface area of E). During this course of this panel, FAA Air Traffic Operations, Flight Standards and those within the UAS Integration office repeatedly said that a distinction between traditional model aircraft and advanced drones would make integration much simpler. It was repeated throughout this panel that the traditional model aircraft community does not pose the same risk that advanced drones pose. These comments should be in the official record of the meetings. As the FAA moves forward on this proposed rule, AMA would urge the review of these meetings where multiple internal and external stakeholders expressed this view.

Again, AMA strongly believes that the final rule should exempt all traditional model aircraft from any and all requirements outlined in Part 89, due to the limited capability of traditional model aircraft.

If the final rule does not include an exemption for traditional model aircraft exemption request, AMA supports the following modifications to the NPRM to better align the costs and benefits of the rule to users of traditional model aircraft.

FAA-Recognized Identification Areas (FRIA)

The (recreational) UAS community is happy to see that the proposed rule outlines a path to exempt specific geographic location from the requirements outlined in the Standard and Limited Remote Id classifications. However, AMA strongly believes that flexibility needs to be granted by the FAA to Community Based Organizations (CBO) regarding this process and remove the 12-month limitation for exemption. The NPRM makes the statement that it expects fewer and fewer flying sites to be needed over time as more UASs are equipped with Remote ID. Again, the agency and the NPRM fails to make a distinction between advanced UASs flying BLVOS and the traditional model aircraft community. As noted above, traditional model aircraft hobbyist have been operating for 80 years and our members are not going to stop flying traditional model aircraft in favor of drones exclusively. A significant portion of recreational UAS users, if not the vast majority, will be operating traditional model aircraft for decades to come even if they also operate more advanced drones. Rather than trying to limit the number of fixed flying sites, the agency should be encouraging the creation of CBOs and a dynamic set of fixed flying sites. When Congress created the CBO model in the last FAA bill, it expected the agency to facility the development of CBOs and encourage operations at fixed sites. The NPRM flies in the face of Congressional intent. In fact, the rule is expressly designed to phase out these identification areas over time, rather than treat them as a viable long-term option for complying with remote ID and promoting model aircraft safety.

If the FAA does not want to exempt traditional model aircraft from Remote ID requirements, it should adopt policies that allow as many fixed sites to operate as possible. Without an exemption, many in the traditional model aviation community will not be able to comply with standard or limited remote ID due to the equipment and other cost requirements, and therefore operating at identification areas will be their only method of remote ID compliance. The elimination of fixed flying site exemption appears to be the direct result of resource restraints of the FAA. It appears that in order to reduce the cost of the Remote ID mandate on the agency, it is seeking to minimize the agencies cost in managing fixed locations. The agency has already underestimated the costs to CBOs to provide this data to the FAA. AMA has already provided at its own significant expense (can we make up a number) the locations of over 2,000 flying sites in the appropriate digital format to the FAA. The agencies unwillingness to develop a process to manage a database of fixed flying site locations is unacceptable. If a UAS user is forced to operate at a fixed location, the agency needs to provide an adequate number of locations and maintain a database of those locations. AMA would note for the record, that local AMA clubs require

both national and local AMA membership to use. The agency fails to account for this in the costs of the rule. AMA assumes other CBOs or operators of fixed sites will require similar charges. It is another example of the FAA making assumptions about UAS operations that do not comport to reality and a pattern of grossly underestimating the costs of compliance to a Remote ID mandate.

There is no safety or security justification explained anywhere in the NPRM for eliminating the FRIA means of compliance with the regulation. I urge the FAA to accommodate and exempt UAS operators at fixed flying site locations and allow fixed site requests and location updates in perpetuity of the rule. If the FAA does not make identification areas a long-term compliance option, they will greatly reduce the number of users who will comply with the regulations thus increasing the risk to the NAS.

Proposed Solution:

The FAA should amend the proposed rule as follows:

- Accept applications from CBOs to establish FAA-recognized identification areas on an ongoing basis and eliminate the 12-month restriction on new applications.
- Accept applications to renew or relocate FAA-recognized identification areas at any time, regardless of how much time has passed since expiration.
- Extend the time period FAA-recognized identification areas would be in effect to 10 years, limiting the renewal burden on the FAA and hobbyists.

Individual UAS Registration

The Remote ID mandate states that it is to help identify the operator of a UAS. AMA has stated above whey this is not necessary for people operating VLOS. Any law enforcement officer is going to be able to quickly identify the operator a traditional model aircraft. This is especially true is the operations are at fixed flying site.

The NPRM proposed to shit UAS registration to the UAS rather than the user. This proposal would only burden AMA members and provide no operational benefit to the government. If the proposal to register UAS individually goes into effect as is, AMA's 180,000 members would be forced to register about 1.62 million aircraft at a cost of $8.1 million, assuming the $5 per aircraft registration fee does not increase over time. This is a substantial investment of time and resources for the model aviation community. Furthermore, individual registration is not necessary for UAS operating at FAA-recognized identification areas because these aircraft are always flown within visual line of sight and no more than 400 feet from the operator. This makes it simple for law enforcement to identify the pilot as they will be the one at the controls at the FRIA.

The current registration process would meet the FAA's stated needs if aircraft are allowed to be operated without broadcast RID at FRIAs. Identification of the operator would be obvious to any law enforcement officer present at the flying site. The registration number would be required to be affixed only while the aircraft is inflight to preserve the historical accuracy of model aircraft for display purposes.

Proposed Solution:

The FAA should amend the proposed rule as follows:

- Remove the requirement to register individual UAS if the aircraft is operating at FRIA and the pilot is a member of a community-based organization.
- Allow the registration number to be temporarily affixed while flying to allow the historic accuracy of the model to be maintained for display purposes.
- Allow registration of the RID transmit equipment instead of the individual aircraft (see proposal below to allow compliance by transmit only (no internet connection) solutions)
- At the very least, update the economic analysis to incorporate the updated cost numbers to match the AMA data. These costs should be included in the cost benefit calculations in the final rule.

Internet Connectivity

This proposed rule requires UAS to transmit information via an internet connection for limited remote ID, and requests internet connectivity for standard remote ID compliance. The majority of traditional model aviation community have been flying safely for decades in rural areas where there is little or no cellular connectivity. Model aircraft are typically not flown close to residential areas because of the noise generated by the aircraft. In fact, new requirements and limitations in controlled airspace are pushing our community into these rural areas, in an effort to reduce the "perceived" threat to manned aircraft in more congested areas.[2] Placing the higher burden of standard remote ID in a less populated area does not align with the associated risk. While the NPRM provides an option to comply with remote ID by flying at FRIA, limited remote ID compliant model aircraft would not be allowed to operate if the FRIA was outside of cellular coverage an no alternative connection to the internet is available.

[2] The term "perceived" is used because the FAA has not substantiated many safety related issues between traditional model aircraft and manned aircraft. While legislation has changed to mandate the FAA to implement new requirements in the name of safety, the actual safety aspect of our hobby has not changed, especially at fixed sites. Given that the proposed rule is expressly designed to eliminate FRIA areas over time, remote area limited ID model aircraft flying would become impossible if the NPRM is implemented as written.

A better option that would eliminate the need for internet connectivity during flight, would be a software-based network solution. The network of UAS Service Suppliers (USS) can support remote ID for non-equipped hobbyists. Only the UAS operator would be required to have access to the Internet – and only when he or she declares their flight. At no time should the UAS need not be connected to the Internet. This would allow the UAS operator to declare his or her flight in advance and from a location where internet connection is present. This option would give the FAA and law enforcement the location, identification, and contact information of the UAS operator.

Proposed Solution:

The FAA should amend the proposed rule as follows:

- Replace the current Limited Remote ID category with a software-based solution (app). This would remove a majority of manufactures standards, leaving standards for only those aircraft designed to be flown beyond line-of-sight. These advanced aircraft could be placed into the Standard ID requirement and transmit a signal for beyond line-of-sight operations.
- Allow operators to use a software-based solution to mark the location of the operation and the times flying will take place (APP or web based) that could be scheduled prior to traveling to the flying location.

Amateur-Built Aircraft

The proposed rule includes an exclusion for compliance with the design and production requirements of remote ID for "amateur-built" aircraft. However, the definition of what constitutes an amateur-built UAS is inadequate and needs to be clarified. The definition should include situations where aircraft parts are purchased and assembled by an individual. Does the FAA have data that verifies that a greater safety risk is associated to aircraft with less than 50% construction and fabrication from the builder? If not, the rule should eliminate, or greatly reduce, the "51%" self-manufactured components rule that is applied to full scale aircraft.

The requirement for amateur-built aircraft to display a serial number is also unnecessary, especially given the fact that many of these aircraft will only operate at FRIA and all within visual line of sight of the pilot. Permanently displayed serial numbers would destroy the historical accuracy of model aircraft that are detailed scale replicas of manned aircraft.

Proposed Solution

The FAA should amend the proposed rule as follows:

- Revise the definition of amateur-built aircraft so that it includes situations where aircraft parts are purchased and assembled, as well as aircraft that are entirely built by hand.
- Remove the requirement for an external serial number for amateur-built UAS as the registration number should be enough to tie the aircraft to the operator.

Economic analysis

Events and Competitions

The proposed rule does not provide an option for remote ID compliance at established UAS events and competitions, which may not be at FAA-recognized identification areas. Like an air show, these events take place in defined locations for a short period of time and often support local charities. The location of these events should be treated like temporary FAA-recognized identification areas, especially since many of the aircraft involved in these shows will not meet the Standard or Limited Remote ID requirements. Hundreds, if not thousands of events take place in this scenario every year. The NPRM fails to address this issue in its costs and benefits section. For example, if AMA were not able to hold events at its headquarters in Muncie, Indiana, the resulting economic loss to the community would be X. Again, the NPRM fails to account for the unique role traditional model aircraft play in the aviation system. The NPRM fails to address the economic harms that would result in failing to provide a safe harbor our traditional model aircraft events and competitions,.

Proposed Solution:

The FAA should amend the proposed rule as follows:

- Establish a simple process to request and receive temporary approval on FAA-recognized identification areas for the purpose of a UAS event or competition.
- One possible means of compliance would be to allow operations to be declared using a software-based solution to mark the location of the operator and event.

Incorrect assumptions on the cost of compliance

The FAA's cost estimates appear to assume that aircraft will become obsolete after 3 years and will be replaced with Remote ID compliant aircraft. This assumption is incorrect for traditional model aircraft. Traditional model aircraft remain in operational condition for many decades. As written, the rule would require these aircraft to be retrofitted with standard or limited remote ID compliant parts once the FRIA sites are eliminated. In addition, there would be cost for registering each UAS and a cost for subscribing to the UAS Service Suppliers. The proposed rule footnotes that the FAA's assessment of aircraft

ownership does not align with AMA's estimates, and states that the FAA is to contact AMA regarding this issue. AMA's data states that the average AMA member owns nine. The FAA should use our data when evaluating the costs of potential mandates.

Proposed Solution:

- Update the economic analysis to incorporate the updated cost numbers to match the AMA data. These costs should be included in the cost benefit calculations in the final rule.
- Update the FAA totals to show an average of nine UAS per AMA member (roughly 180,000).

FAA failed to include the economic impact of model aircraft events to local communities, as well as charities, as affected entities.

With an average number of 2,500 annual AMA sanctioned events, and an average of $2,500 in direct event spending and 100 attendees, the economic impact to local communities in terms of food, fuel, lodging, services, taxes, wages and other attendee and event related purchases is well over $10,000 per event. This translates nationally to $25 million in economic impacts just for AMA events. This does not include the secondary market of model aircraft swap meets and auctions that also generate millions of dollars in economic impact for local communities. With the eventual closure of model flying fields (FRIAs) these non-flying events will become extinct as will local community-based flying clubs.

Numerous national and local charities supported by model flying events will be adversely affected economically as well by the rule -to the tune of millions of dollars.

Proposed Solution:

- Provisions need to be added to the rule to continue indefinitely the FRIA locations and to easily authorize temporary FRIA locations for special events. If the current version of the regulation is implemented, the adverse cost of eliminating or restricting the events should be included in the cost benefit calculations in the final rule.
- The FAA should survey UAS event managers and contest directors to determine the financial impact that UAS events have on charitable organizations. This study should be added to the "economic impact to small entities" portion of the rule.

The FAA underestimated the cost for registration

The cost for the model aviation community has been significantly underestimated. On average, AMA members each own 9 aircraft, and many members own totals reaching into the hundreds. AMA's 180,000 members would be forced to register about 1.62

million aircraft at a cost of $8.1 million, assuming the $5 per aircraft registration fee does not increase over time. In addition to cost, the FAA needs to consider the time requirement involved in registering dozens or even hundreds of aircraft. If FAA registration takes an average of five minutes, the time burden on the individual is unreasonably burdensome.

Proposed Solution:

- Update the economic analysis to incorporate the updated cost numbers to match the AMA data. These costs should be included in the cost benefit calculations in the final rule.
- Recreational UAS registration should remain status quo. If the true purpose of the registration is to identify the owner of the UAS, the current registration process and requirements meets that objective. In fact, restructuring the registration process would call into question the legitimacy and effectiveness of the current registration process.

The FAA Assessment of the economic impact to small entities is incomplete

The proposed rule failed to evaluate the impact remote ID implementation would have on the thousands of hobby stores around the country selling UAS. To properly assess the impact on small entities, the FAA needs to survey this link in the distribution chain.

Proposed Solution:

- Conduct a Survey of hobby stores in the United States who sell UAS to determine the cost impact of reduced sales due to the increased cost and complexity of compliance with this proposed rule. The impact should be revised to account for the cost to include hobby shops that are small entities. These costs should be included in the cost benefit calculations in the final rule.

Cost of Implementation by Law Enforcement (LE)

Another thing that is not addressed in the proposed rule is the cost equipping 18,000 police departments with technology required to access the Remote ID data and the required training of 750,000 sworn officers to use the new technology.

Since there is no demonstrated threat, it is entirely reasonable to expect that budget-challenged departments will not be able to access the Remote ID data or at best designate one or two officers to deal with drone identification.

Proposed Solution:

- The FAA should conduct a survey of law enforcement departments to determine if they are equipped with technology (e.g. smartphones or mobile computers) to

allow for the implementation of the NPRM. If not, what would be the cost to equip. The survey should also include the cost to train the sworn officer workforce in the use of the new technology and the appropriate actions required upon use of the technology. These costs should be included in the cost benefit calculations in the final rule.

Cost of Creating the RID Applications and Database for Personally Identifiable Information

Currently PII is obtained by a LEO through a two-stage electronic interaction. The first interaction is conducted via the **National Law Enforcement Telecommunications System (NLETS)** by the officer or their dispatcher. When a request is entered into NLETS, it is routed across state systems – for example, an out of state registration check, driver's information, or criminal history. At the same time, the officer/dispatcher can make a national request for active wants, warrants, sex offender registry or protective orders. These checks are routed via NLETS to the National Crime Information Center **(NCIC)** via the Criminal Justice Information Services Division (CJIS) Division of the FBI.

RID will be a whole new database that will have to be built, managed, maintained, updated, supported, routinely audited and paid for. The NPRM is silent on who will pay for the creation of the RID database This database will also have to be integrated with the registration database in order to achieve a useful method for the LEO to identify the individual pilot/owner of the UA. If the cost of the NCIC is used to inform the cost estimate for this aspect of the regulation, it cold be billions of dollars of federal funds.

The NPRM provides no information on how the "secure" tracking application will be built and distributed. How will the chain of custody rules for evidence be met by a third-party application? The footnote (p117) that states: ***"The FAA anticipates that in the future, third parties may develop mobile phone applications for law enforcement use."*** This appears to be the only mention of the requirement for the development of the application. It appears to me that at least three apps are going to have to be built, plus, a web portal that integrates all the RID and LAANC USS data into a real-time searchable and relatable database. The applications, as well as state and local guidelines for the use of the app will have to be marketed, rolled out and trained.

Proposed Solution:
The FAA amend the proposed rule as follows:

- Delay implementation of the regulation until funding and implementation plans are available to align the RID implementation timeline with the availability of the applications and database(s) required to allow LEO's access to the PII associated with the RID

- Include the costs of the RID database and application development in the final rule cost benefit analysis

Viability of the NPRM for Law Enforcement

There is nothing in the NPRM about how RID data will be integrated with the rest of the data that LE routinely uses. This is a critical point because LEOs are trained to use personal identity information (PII) about the person they have in front of them. And because things happen fast, their safety depends on having it available in real-time.

Many local law enforcement agencies do not have the resources to outfit their officers with phones – investigators yes, patrolmen often no (see earlier comment on cost of equipping LEOs). Given the lack of official mobile phones in many departments, implementation of the NPRM is dependent on officers downloading a "secure" tracking application onto their personal phones that is to be utilized for "official business." This has the impact of mixing private property for public use which means it can be taken into evidence.

Without a sustained effort to engage law enforcement, the RID program will not be adopted by the very customers for the information that drove the creation of the rule. If the rule is allowed to become final without these critical questions being answered the FAA will have "*done its job*" filling the sky with compliant aircraft, but the people on the ground still won't be able to identify them, or, more importantly, the pilot.

The NPRM states: *The owners of small unmanned aircraft registered after the effective date of the final rule would have to comply with the new registration requirements prior to the operation of the unmanned aircraft.* This is a clear regulatory statement but unless verification is built into the UAS RID software there is no mechanism to enforce the new requirement. How will the FAA measure compliance after the effective date of the regulation?

Proposed Solution:
The FAA amend the proposed rule as follows:

- Include the plans for rollout to LE departments and agencies in the final rule preamble
- Include the cost of the rollout activity in the cost benefit section of the preamble to the final rule

Compliance Dates

FAA will not consider that RID has been implemented until the implementation period is complete. Since publishing the Operation Over People (OOP) and Night rules are dependent on the Remote ID Rule, the OOP and Night Ops rules can't be implemented

for at least FOUR years! The FAA should consider early implementation of RID on commercial UAS to allow the OOP and Night Operation additions to 14 CFR Part 107 regulations.

Proposed Solution:
The FAA amend the proposed rule as follows:

- Add provisions to the RID final rule that allows for voluntary compliance with FAA accepted standards for broadcast RID as an enabling technology for OOP and Night Operations under 14 CFR Part 107.
- Incorporate Broadcast RID according to FAA accepted consensus-based standards into 14 CFR Part 107 rules as a prerequisite for OOP.

Compliance and enforcement issues

The NPRM States: *No UAS could be produced for operation in the United States after two years and no UAS could be operated after three years except in accordance with the requirements of this proposal.*

Under what authority will the FAA enforce this? It has nothing to do with civil aviation safety and there is no expansion of the FAA's authority in the FAA reauthorization of 2018. FAA does not have the staff to send agents to monitor every point of sale in the country – both brick and mortar and online. Are other agencies of the Federal Executive Branch available to enforce these provisions? How can they without federal law on the books that gives them the authority. According to the NPRM, 83% of all drones are imported. (Draft p195) That makes this a complex port of entry issue, involving some combination of the Department of Commerce and US Customs. If this provision is struck down in the courts, would the rule ever be able to go into effect?

Proposed Solution:
The FAA amend the proposed rule as follows:

- Publish companion regulations under the Department of Commerce's authority to restrict the import of UAS that are found to be compliant with the RID standard that can be referenced in the FAA final rule.
- Include a legal opinion in the preamble of the FAA final rule from the DOJ that spells out the Federal Statutes that provide the authority of the DOC to enforce the RID import restrictions. These legal opinions should also explain the impact on trade treaties that are currently in place and if these treaties allow for restrictions on imports of noncompliant UAS

Privacy issues

The current draft ASTM standard leaves it entirely up to the FAA to decide which message elements (data fields) will be available to each class of user. Providing the public with the location of the operator does not solve any security problems - and quite possibly creates new ones. The license plate analogy for RID of UAS should be carried to the same protection for privacy that is afforded to drivers. PII for an automobile license is not available to the general public and should not be available for RID either.

The NPRM requires each USS to maintain the operational data for a period of time, currently contemplated as six months. Each USS will secure and safeguard the data, while making it available to the FAA and authorized law enforcement agencies - all while developing and pursuing their own business model**.** Will the USS be able to sell this data? This could possibly reduce the cost of providing the USS RID service but what would be the cost to the individuals to have their information sold?

Proposed Solution:

The FAA amend the proposed rule as follows:

- Explicitly state that USS will not be allowed to sell or barter the PII of any participant in the RID system
- Explicitly state that the PII for pilots of UAS will not be made available to the general public and will be protected to the same extent that automobile license plate information is currently protected from unauthorized release.