# 标注一览

## 章磊在2页标注了3处



			北向速度	✓	✓		VX	float	X Speed				
			东向速度	✓	✓		vy	float	у				
			天向速度	✓	✓		vz	float	Z Speed, 向上为正				
4 global_position_int	绝对坐标	云端	无人机ID	✓	✓	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1				
			时间戳	⋖	⋖		time_std_s	uint32_t	Unix标准时,单位s	⋖	GLOBAL_POSITION_INT (#33)		
			相对高度	✓	✓		relative_alt	int32_t	Altitude above ground in meters, expressed as * 1000 (millimeters)				
			俯仰角	✓	✓		pitch_deg	int16_t	deg*100, [-900~900] ,如果未知状态,设置为1800	✓	115 11 1	· — — — —	
			滚转角	✓	✓		roll_deg	int16_t	deg*100, [-900~900], 如果未知状态,设置为1800	✓		/  4 💻 📗	
			航向	✓	✓		hdg	uint16_t	Vehicle heading (yaw angle) in degrees * 100, 0.0359.99 degrees. If unknown, set to: UINT16_MAX			以同【	
5 gps_raw	GPS数据	云端	无人机ID	✓	⋖	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1		1,0,0	<b>77</b> ( )	
			时间戳	⋖	⋖		time_std_s	uint32_t	Unix标准时,单位s	⋖	GPS_RAW_INT (#24)		
			定位类型	✓	✓		fix_type	uint8_t	0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field upless it is at least two, so always correctly fill in the fix				
			GPS纬度	✓	✓		lat_gps	int32_t	Latitude (WGS84), in degrees * 1E7	⋖			
			GPS经度	✓	ゼ		lon_gps	int32_t	Longitude (WGS84), in degrees * 1E7	⋖			
			GPS海拔	✓	✓		alt_gps	int32_t	Altitude (AMSL, NOT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude.	•			

#1

4 进入退出人工操控 XYI\_CMD\_MANU\_STATUS\_CTRL 人工操控状态控制指令, 在着陆"55=识别"状态下进入 y\_lon\_n 指令状态。0=进入人工操控模式,1=退出人工操控模式,进入到\*20= 悬停等待\*状态 ⋖ XYI\_CMD\_MANU\_H\_CTRL 5 人工水平操控 人工经拉水平控制 无人机ID id\_uav\_xyi 航路数据应答 云端 uint8\_t 讯载无人机唯一id、默认1 MISSION\_ACK (#47) 目标系统 target\_system 执行命令的系统, 0 for all components, 默认0 uint8\_t offset\_y\_per 以左上角为原点,图像目标坐标占竖边全长的百分比 应答类型 type uint8\_t 见"航路数据应答表" XYI\_CMD\_MANU\_V\_CTRL 人工操控高度控制 航路查询指令 飞机 无人机ID id\_uav\_xyi uint8\_t 迅蚁无人机唯一id,默认1 地面坐标系下,目标高度,单位米 目标系统 target\_system uint8\_t 执行命令的系统, 0 for all components, 默认0 7 设置飞行当地坐标偏移 XYI\_CMD\_CO\_OFFSET\_SET 设置google map坐标点和google earth坐标的便宜量 2=航路坐标查询;3=应急备降点坐标查询; 查询方式 mode uint8\_t 经度偏移量,单位度 航路数据应答2 云端 无人机ID 迅蚁无人机唯一id,默认1 108 mission\_ack\_2 offset\_lat\_deg 纬度偏移量,单位度 目标系统 target\_system uint8\_t 执行命令的系统, 0 for all components, 默认0 8 设置应急着陆点信息 XYI\_CMD\_EMLAND\_INFO\_SET 应答类型 甲·前路数据应答表" 应为8 表示"带参数应答" uint8\_t 应急航路飞行速度 航点数 uint16\_t Number of mission items in the sequence em\_1\_long\_deg 应急着陆点1经度 坐标系 uint8\_t 见"坐标系类型表" em\_1\_lat\_deg 应急着陆点1纬度 根据count=n数值发送n组坐标 x\_lat\_1 float em\_1\_rep\_h\_m em\_2\_long\_deg 应急着陆点1高度 y\_lon\_1 float 应急着陆点2经度 z\_alt\_1 em\_2\_lat\_deg 应急着陆点2纬度 设置航路点速度。起飞(第一点)/着陆(最后一点)速度表示垂直速度,航路速度表示水平速度 em\_2\_re\_h\_m 应急着陆点2高度 9 设置着陆场相对高度差 XYI\_CMD\_LOCAL\_GPS\_OFFSET 设置着陆场相对高度差 x\_lat\_n height\_diff\_landing\_m y\_lon\_n 着陆场海拔减去起飞场海拔 z\_alt\_n 航路数据应答3 云端 109 mission\_ack\_3 无人机ID id\_uav\_xyi uint8\_t 讯载于人机唯一id 默认1 目标系统 执行命令的系统, 0 for all components, 默认0 uint8\_t target\_system 应答类型 uint8\_t 见"航路数据应答表",应为8,表示"带参数应答" 应急点数 应急着陆点数量 count\_em uint16\_t x1 x\_lat\_1 根据count=n数值发送n组坐标,n<=5 y\_lon\_1 float

p.1

#2

#### 飞机遥测通信协议

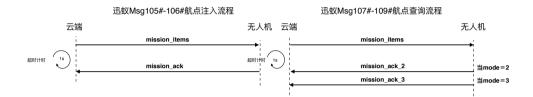
Msg #	Msg Name	消息名称	方向 (目的)	参数名称	是否 存储		传输方式	Field Name	Туре	Description	不同	Ref Mavlink Msg Name & #									
1	heartbeat	心跳	云端	无人机ID	⋖		TCP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1	✓	HEARTBEAT (#0)						- Cabul Date			
				控制器ID	✓			id_iso_xyi	uint8_t	迅蚁无人机控制器唯一id,默认1	✓							系统状态	表		
				飞行器模式	✓	✓		base_mode	uint8_t	0=离线, 1=上线, 2=装订, 52=待飞, 3=起飞, 4=爬升, 5=航路, 55=识别, 6=下降, 7=投放, 8=返航便升, 9=返航航路, 10-返航下降, 11=着陆, 18=完毕, 20=悬停等待, 30=应急航路, 31=应急下降, 32=应急着陆, 33=人工操控, 34=遥控	✓			im 2	<b>7</b> 一域通信	局域通信	<b>5</b> 备用	摄像头	超声波	fCC	M
				系统状态	⋖	✓		system_status	uint8_t	按位定义,参考"系统状态表"	✓			1				正 异			
				协议版本	✓			xylink_version	uint8_t	迅蚁协议版本, This file has protocol version: 1. The version numbers range from 1-255				•				#	m		_
2	battery_status	电池状态	云端	无人机ID	✓	⋖	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1											
				时间戳	✓	⋖		time_std_s	uint32_t	Unix标准时,单位s	✓	BATTERY_STATUS (#147)									
				电池电压	⋖	⋖		voltages	uint16_t[10]	Battery voltage of cells, in millivolts (1 = 1 millivolt). Cells above the valid cell count for this battery should have the UINT16_MAX value.											
				电池电流	ゼ	✓		current_battery	int16_t	Battery current, in 10*milliamperes (1 = 10 milliampere), -1: autopilot does not measure the current											
				电池余量	⋖	✓		battery_remaining	int8_t	Remaining battery energy: (0%: 0, 100%: 100), -1: autopilot does not estimate the remaining battery											
				控制输出	ゼ	✓		fc_output_ave	uint16_t	飞控输出到动力系统控制量的平均值,范围0~65535	✓										
3	local_position_ned	相对坐标	云端	无人机ID	ゼ	✓	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1	默认1										
				时间戳	⋖			time_std_s	uint32_t	Unix标准时,单位s		LOCAL_POSITION_NED (#32)									
				北向坐标	ゼ			х	float	X Position											
				东向坐标	⋖	⋖		у	float	Y Position											
				天向坐标	໔	⋖		z	float	Z Position,向上为正											
				北向速度	⋖	⋖		vx	float	X Speed											
				东向速度	⋖			vy	float	у											
				天向速度	ゼ			vz	float	Z Speed, 向上为正											
																	•				
4	global_position_int	绝对坐标	云端	无人机ID	☑	ゼ	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1											
				时间戳	⋖	⋖	_	time_std_s	uint32_t	Unix标准时,单位s	ゼ	GLOBAL_POSITION_INT (#33)									
				相对高度	⋖	⋖		relative_alt	int32_t	Altitude above ground in meters, expressed as * 1000 (millimeters)											
				俯仰角	⋖			pitch_deg	int16_t	deg*100, [-900~900] , 如果未知状态,设置为1800	ゼ	优先	15	7							
				滚转角	⋖	ゼ		roll_deg	int16_t	deg*100, [-900~900] , 如果未知状态,设置为1800	ゼ	47F <del>4</del> F	. 4	.4	ᆮ	⊒,					
				航向	☑	✓		hdg	uint16_t	Vehicle heading (yaw angle) in degrees * 100, 0.0359.99 degrees. If unknown, set to: UINT16_MAX			,=/	X		<b>-</b> ]					
5	gps_raw	GPS数据	云端										~ ~ 4	•							
	1	GF J9XM	公期	无人机ID	_	✓	UDP	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1											
		Gr Jgam	乙期	无人机ID 时间戳	₹	₹	UDP	id_uav_xyi time_std_s	uint8_t uint32_t	迅敏无人机唯一id,默认1 Unix标准时,单位s		GPS_RAW_INT (#24)									
		CF SQLW	ム地		_																
		dr 3ggm	ム畑	时间戳	๔	<b>√</b>		time_std_s	uint32_t	Unix标准时,单位s	<b>✓</b>										
		GP 39A3M	公地	时间戳 定位类型	<b>♂</b>	<ul><li>✓</li><li>✓</li></ul>		time_std_s fix_type	uint32_t uint8_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least two, so always correctly fill in the fix.							J				
		OF ORAM	△ 3·西	时间戳 定位类型 GPS纬度	<b>♂</b>	<ul><li>✓</li><li>✓</li></ul>		time_std_s fix_type lat_gps	uint32_t uint8_t int32_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least two, so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7	<b>✓</b>			_			J				
		OF ORAM	A Mil	时间戳 定位类型 GPS纬度 GPS经度	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			time_std_s fix_type lat_gps lon_gps	uint32_t uint8_t int32_t int32_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least two. so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7 Longitude (WGS84), in degrees * 1E7							J				
		CT OSENS	AND	时间戳 定位类型 GPS纬度 GPS经度 GPS海拔	<ul><li>✓</li><li>✓</li><li>✓</li><li>✓</li><li>✓</li></ul>			time_std_s fix_type lat_gps lon_gps alt_gps	uint32_t uint8_t int32_t int32_t int32_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least time, so always correctly fill in the fix Latitude (WGS84), in degrees * 167 Longitude (WGS84), in degrees * 1E7 Allitude (AMSL, NOT WGS94), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude.							J				
		0.030	AND	时间戳 定位类型 GPS纬度 GPS经度 GPS海拔 GPS水平置信度	<ul><li>✓</li><li>✓</li><li>✓</li><li>✓</li><li>✓</li></ul>			time_std_s fix_type lat_gps lon_gps alt_gps eph	uint32_t uint8_t int32_t int32_t int32_t int32_t uint16_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least two, so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7 Longitude (WGS84), in degrees * 1E7 Altitude (AMSL, NOT WGS94), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude.  GPS HDOP horizontal dilution of position (untiless). If unknown, set to: UINT16_MAX							J				
		0.00	AND	时间截 定位类型 GPS纬度 GPS经度 GPS海拔 GPS水平置信度 GPS垂直置信度	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			time_std_s fix_type lat_gps lon_gps alt_gps eph epv	uint32_t uint8_t int32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least time, so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7 Latitude (WGS84), in degrees * 1E7 Altitude (AMSL. NOT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude.  GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX							J				
		U OS, IS		时间戳 定位类型 GPS纬度 GPS绕度 GPS海拔 GPS水平置信度 GPS垂直置信度 GPS地速				time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps	uint32_t uint8_t uint8_t int32_t int32_t int32_t uint16_t uint16_t uint16_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field united it is at least two so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7 Longitude (WGS84), in degrees * 1E7 Altitude (AMSL, NDT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude. GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0359.99 degrees.							J				
125	image_jpg_piece	回传航路图像片	云繼	时间戳 定位类型 GPS纬度 GPS经度 GPS海拔 GPS水平置信度 GPS地速 GPS地速				time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog	uint32_t uint8_t int32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t uint16_t uint16_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least time, so always correctly fill in the fix Latitude (WGS84), in degrees * 1E7 Latitude (WGS84), in degrees * 1E7 Altitude (AMSL, NDT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude. GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0.359.99 degrees. If unknown, set to: UINT16_MAX							J				
125	Image_jpg_piece			时间戳 定位类型 GPS纬度 GPS纬度 GPS海拔 GPS水平置信度 GPS垂直置信度 GPS地速 GPS地速方向 卫星数			TCP	time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog satellites_visible	uint32_t uint8_t int32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t uint16_t uint16_t uint16_t uint16_t	Unix标准时, 单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least time, so, always correctly fill in the fix Latitude (WGS84), in degrees * 167 Latitude (WGS84), in degrees * 167 Allitude (AMSI. NOT WGS84) in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSI. allitude in addition to the WGS84 allitude. GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0359.99 degrees. If unknown, set to: UINT16_MAX Number of satellites visible							J				
125	image_jpg_piece			时间戳 定位类型 GPS纬度 GPS纬度 GPS海拔 GPS水平置信度 GPS地速 GPS地速 GPS地速方向 卫星数 无人机D			TCP	time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog satellites_visible id_uav_xyi	uint32_t uint32_t int32_t int32_t int32_t int32_t uint16_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless it is at least time, so always correctly fill in the fix Latitude (WGS84), in degrees * 167 Latitude (WGS84), in degrees * 167 Allitude (AMSIL, NOT WGS84) in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSIL allitude in addition to the WGS84 allitude.  GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS YDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0359.99 degrees. If unknown, set to: UINT16_MAX Number of satellites visible  进入到15—前路*状态后,飞机每20秒拍摄一帧图像,分若干次发送分片二进制数据							J				
125	image_jpg_piece			时间戳 定位类型 GPS纬度 GPS纬度 GPS海拔 GPS水平置信度 GPS地速 GPS地速 GPS地速方向 卫星数 无人机D 图像编号			TCP	time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog satellites_visible id_uav_xvi image_id	uint32_t uint32_t uint32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t uint16_t uint16_t uint32_t uint32_t uint32_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTIK. Some applications will not use the value of this field unless if is at least not a condense conserved. Iff in the fix Latitude (WGS84), in degrees *1E7 Longitude (WGS84), in degrees *1E7 Attitude (AMSL, NOT WGS84), in meters *1000 (positive for up). Note that virtually all GPS modules provide the AMSL altitude in addition to the WGS84 altitude.  GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s *100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees *100, 0.0.359.99 degrees. If unknown, set to: UINT16_MAX Number of stabilities visible 进入到15—颠簸*状态后,飞机每20秒拍摄一帧图像,分若干次发送分片二进制数据 图像编号							J				
125	image_jpg_plece			时间戳 定位类型 GPS纬度 GPS纬度 GPS将接 GPS将直置信度 GPS地速 GPS地速 GPS地速 GPS地速 GPS地速 BCS TAID 图像编号			TCP	time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog satellites_visible id_uav_xyi image_jid image_piece_num	uint32_t uint32_t uint32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t uint16_t uint16_t uint16_t uint3_t uint3_t uint3_t uint3_t uint3_t uint3_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless list at least two see always consorble fill in the fix Latitude (WGS84), in degrees *1E7 Longitude (WGS84), in degrees *1E7 Attitude (AMSL, NOT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL attitude in addition to the WGS84 attitude.  GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0.359.99 degrees. If unknown, set to: UINT16_MAX Number of stabilities visible 进入到15-航路*状态后,飞机每20秒拍摄一帧图像,分若干次发送分片二进制数据 图像编号 图像分块数量							J				
125				时间戳 定位类型 GPS纬度 GPS纬度 GPS将接 GPS水平重信度 GPS地速 GPS地速 GPS地速 GPS地速 GPS地速 B像分块数量 图像分块数量	\( \frac{1}{2} \)		TCP	time_std_s fix_type lat_gps lon_gps alt_gps eph epv vel_gps cog satellites_visible id_uav_xyi image_ld image_piece_num image_piece_id	uint32_t uint32_t uint32_t int32_t int32_t int32_t uint16_t uint16_t uint16_t uint16_t uint16_t uint18_t uint8_t uint8_t uint8_t uint8_t uint8_t uint8_t	Unix标准时,单位s 0-1: no fix, 2: 2D fix, 3: 3D fix, 4: DGPS, 5: RTK. Some applications will not use the value of this field unless list at least two so always convents fill in the fix Latitude (WGS84), in degrees * 1E7 Longitude (WGS84), in degrees * 1E7 Atitude (AMSL, NOT WGS84), in meters * 1000 (positive for up). Note that virtually all GPS modules provide the AMSL atitude in addition to the WGS84 atitude. GPS HDOP horizontal dilution of position (unitless). If unknown, set to: UINT16_MAX GPS VDOP vertical dilution of position (unitless). If unknown, set to: UINT16_MAX GPS ground speed (m/s * 100). If unknown, set to: UINT16_MAX Course over ground (NOT heading, but direction of movement) in degrees * 100, 0.0.359.99 degrees. If unknown, set to: UINT16_MAX Number of statellites visible 进入到*5-新路*状态后,飞机每20秒拍摄一帧图像,分若干次发送分片二进制数据 图像编号 图像分块数量 0~255							J				

飞机遥控通信协议(全部TCP方式)

Msg #	Msg Name	消息名称	方向 (目的)	参数名称	Field Name	Туре	Description	不同	Ref Mavlink Msg Name & #
101	command_xyi_long	控制指令	飞机	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1	✓	COMMAND_LONG ( #76 )
				目标系统	target_system	uint8_t	执行命令的系统,0 for all components,默认0	⋖	
				指令	command	uint16_t	Command ID, 在"指令表"定义		
				系统状态	confirmation	uint8_t	0: First transmission of this command. 1-255: Confirmation transmissions (e.g. for kill command)		
				參数1	param1	float	Parameter 1, 见"指令表"		
				參数2	param2	float	Parameter 2, 见"指令表"		
				参数3	param3	float	Parameter 3, 见"指令表"		
				参数4	param4	float	Parameter 4, 见"指令表"		
				参数5	param5	float	Parameter 5, 见"指令表"		
				參数6	param6	float	Parameter 6, 见"指令表"		
				參数7	param7	float	Parameter 7, 见"指令表"		
102	command_ack	控制指令响应	云端	无人机ID	id_uav_xyi	uint8_t	迅敏无人机唯一id,默认1		
				指令	command	uint16_t	Command ID, 在"指令表"定义		COMMAND_ACK (#77)
				响应	result	uint8_t	见"指令响应表"		
105	mission_items	航路数据	飞机	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1		MISSION_ITEM (#39)
				目标系统	target_system	uint8_t	执行命令的系统,0 for all components,默认0	⋖	
				航点数	count	uint16_t	Number of mission items in the sequence	⋖	
				坐标系	frame	uint8_t	见"坐标系类型表"		
				x1	x_lat_1	float	根据count = n数值发送n组坐标		
				y1	y_lon_1	float			
				z1	z_alt_1	float			
				v1	v1	float	设置航路点速度。起飞(第一点)/着陆(最后一点)速度表示垂直速度,航路速度表示水平速度		
				xn	x_lat_n	float			
				yn	y_lon_n	float			
				zn	z_alt_n	float			
				vn	vn	float			
106	mission_ack	航路数据应答	云端	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1		MISSION_ACK (#47)
				目标系统	target_system	uint8_t	执行命令的系统, 0 for all components, 默认0		
				应答类型	type	uint8_t	见"航路数据应答表"		
107	mission_inq	航路查询指令	飞机	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1	₹	
				目标系统	target_system	uint8_t	执行命令的系统,0 for all components,默认0	•	
				查询方式	mode	uint8_t	2=航路坐标查询; 3=应急备降点坐标查询;	⋖	
108	mission_ack_2	航路数据应答2	云端	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1		
				目标系统	target_system	uint8_t	执行命令的系统,0 for all components,默认0		
				应答类型	type	uint8_t	见"航路数据应答表",应为8,表示"带参数应答"		
				航点数	count	uint16_t	Number of mission items in the sequence		
				坐标系	frame	uint8_t	见"坐标系类型表"		
				x1	x_lat_1	float	根据count = n数值发送n组坐标		
				y1	y_lon_1	float			
				z1	z_alt_1	float			
				v1	v1	float	设置航路点速度。起飞(第一点)/着陆(最后一点)速度表示垂直速度,航路速度表示水平速度		
						float			
				yn	x_lat_n y_lon_n	float			
				yn zn	z_alt_n	float			
				vn	vn vn	float			
109	mission_ack_3	航路数据应答3	云端	无人机ID	id_uav_xyi	uint8_t	迅蚁无人机唯一id,默认1		
				目标系统	target_system	uint8_t	执行命令的系统, 0 for all components, 默认0		
				应答类型	type	uint8_t	见"航路数据应答表",应为8、表示"带参数应答"		
				应急点数	count_em	uint16_t	広急者は点数量		
				x1	x lat 1	float	根据count = n数值发送n组坐标,n<=5		
				y1	y_lon_1	float	manuschiller in the second sec		
				z1	z_alt_1	float			
						1			
				xn	x_lat_n	float			
				yn	y_lon_n	float			
				zn	z_alt_n	float			
					-		+		

指令表

MD D	指令名称	Field Name	Description	不同	Ref Mavlink Msg Name & #
1	开始起飞	XYI_CMD_START_TAKEOFF	自主飞行开始指令	⋖	MAV_CMD, 24
		Mission Param #1	Empty	⋖	
		Mission Param #2	Empty		
		Mission Param #3	Takeoff ascend rate [ms^-1]		
		Mission Param #4	Yaw angle [rad] (if magnetometer or another yaw estimation source present), ignored without one of these		
		Mission Param #5	Empty	⋖	
		Mission Param #6	Empty	ゼ	
		Mission Param #7	Empty	ゼ	
2	应急着陆	XYI_CMD_EMER_LAND	应急着陆指令,在"5=航路"状态下可进入	⋖	MAV_CMD, 23
		Mission Param #1	着陆目标编号		
		Mission Param #2	着陆模式, 0=GPS, 1=图像	₹	
		Mission Param #3	Empty	₹	
		Mission Param #4	Desired yaw angle [rad]		
		Mission Param #5	Empty	⋖	
		Mission Param #6	Empty	⋖	
		Mission Param #7	Empty	✓	
3	调参指令	XYI_CMD_PID_TEST	PID调参指令	⋖	
		Mission Param #1	参数1	₹	
		Mission Param #2	参数2	₹	
		Mission Param #3	参数3	₹	
		Mission Param #4	参数4	₹	
		Mission Param #5	参数5	₹	
		Mission Param #6	参数6	₹	
		Mission Param #7	参数7	₹	
4	进入退出人工操控	XYI_CMD_MANU_STATUS_CTRL	人工操控状态控制指令,在着陆*55=识别*状态下进入	₹	
		cmd_status	指令状态。0=进入人工操控模式,1=退出人工操控模式,进入到"20= 悬停等待"状态	✓	
5	人工水平操控	XYI_CMD_MANU_H_CTRL	人工操控水平控制		
		offset_y_per	以左上角为原点,图像目标坐标占竖边全长的百分比	₹	
6	人工高度操控	XYI_CMD_MANU_V_CTRL	人工操控高度控制		
		offset_z_m	地面坐板系下,目标高度,单位米	✓	
7	沿着水池市特殊和市场		设置monde mon学标点的monde earth学标的语言是	_	
7	设置飞行当地坐标偏移	XYI_CMD_CO_OFFSET_SET	设置google map坐标点和google earth坐标的便宜量	⋖	
7	设置飞行当地坐标偏移	XYI_CMD_CO_OFFSET_SET offset_long_deg	经度偏移量,单位度	<b>√</b>	
		XYI_CMD_CO_OFFSET_SET  offset_long_deg  offset_lat_deg	经度编移量,单位度 纬度编移量,单位度	<b>♂</b>	
7	设置飞行当地坐标偏移 设置应急着陆点信息	XYI_CMD_CO_OFFSET_SET offset_long_deg offset_lat_deg XYI_CMD_EMLAND_INFO_SET	经废稿移量,单位度 转成编移量,单位度 应急者结点信息设置	<ul><li>✓</li><li>✓</li><li>✓</li></ul>	
		XYI_CMD_CO_OFFSET_SET  offset_long_deg  offset_lat_deg  XYI_CMD_EMLAND_INFO_SET  route_vel	经废编号量,单位废 持度编号量,单位度 应急者能点体息设置 应急等部飞行速度		
		XYI_CMD_CO_OFFSET_SET offset_long_deg offset_lat_deg XYI_CMD_EMLAND_INFO_SET	社交易等是,并已发 转式多形型,并已发 它参数是在公司总理 它参数是有"行政政 它参数是在"行政政		
		XYI_CMD_CO_OFFSET_SET  offset_long_deg  offset_lat_deg  XYI_CMD_EMLAND_INFO_SET  route_vel	经废编号量,单位废 持度编号量,单位度 应急者能点体息设置 应急等部飞行速度		
		XYI_CAD_CO_OFFSET_SET  offset_lat_deg  STOLEL_lat_deg  XYI_CAD_EMIAND_INFO_SET  route_vet  em_1_lat_deg  em_1_lat_deg  em_1_lat_deg	發度解釋。 异位度 转度解釋。 异位度 应多相称在200度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度		
		XYI_CMD_GO_OFFSET_SET offset_long_deg offset_lait_deg XYI_CMD_EMILAND_INFO_SET route_vel emi_1_long_deg emi_1_lait_deg	经发展移民,并已发 持度移民,并已发 企会相似的总理 应会相似的法定 应会相似的法定 企会相似的法定		
		XYI_CAD_CO_OFFSET_SET  offset_lat_deg  STOLEL_lat_deg  XYI_CAD_EMIAND_INFO_SET  route_vet  em_1_lat_deg  em_1_lat_deg  em_1_lat_deg	發度解釋。 异位度 转度解釋。 异位度 应多相称在200度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度 应多相称在100度		
		XYI_CND_CO_OFFSET_SET  offset_long_deg  offset_long_deg  Offset_long_deg  Offset_long_deg  em_1_strong_deg  em_1_strong_deg  em_1_strong_deg	社交票等差,并已发 转变等等差,并已发 在多点等1寸进发 在多类性点性发 应多类性点性发 应多类性点性发 应多类性点性发 医多类性点性衰 定多类性点性衰		
	设置应急看路点信息	XYI_CND_CO_OFFSET_SET  offset_Ling_deg  offset_Ling_deg  XYI_CND_ENLAND_NFO_SET  route_yet  ent_1 long_deg  ent_1 list_deg  ent_1 list_deg  ent_2 long_deg  ent_2 long_deg  ent_2 long_deg  ent_2 long_deg  ent_2 long_deg	经实际等。并以实 转度等等。并以实 企会有效应的设置 应会有效的设定 定会有效的设定 定会有效的设定 应会有效的现在 定会有效的现在 定会有效的现在 定会有效的现在 定会有效的现在 定会有效的现在 定会有效的现在 定会有效的现在		



#### 指令响应表

	CMD	指令响应名称	Field Name	Description	不同	Ref Mavlink Msg Name & #
	0	执行成功	MAV_RESULT_ACCEPTED	执行		MAV_RESULT
	1	临时拒绝	MAV_RESULT_TEMPORARILY_REJECTED	临时拒绝		
П	2	永久拒绝	MAV_RESULT_DENIED	永久拒绝		
	3	不支持	MAV_RESULT_UNSUPPORTED	不支持		
	4	执行失败	MAV_RESULT_FAILED	执行失败		

#### 坐标系类型表

CMD	名称	Field Name	Description	不同	Ref Mavlink Msg Name & #
0	大地坐标系	MAV_FRAME_GLOBAL	Global coordinate frame, WGS84 coordinate system. First value / x: latitude, second value / y: longitude, third value / z: positive altitude over mean sea level (MSL)		MAV_FRAME
1	地面坐标系	MAV_FRAME_LOCAL_NED	Local coordinate frame, Z-up (x: north, y: east, z: down).		

#### 航路数据应答表

CMD	航路数据应答名称	Field Name	Description	不同	Ref Mavlink Msg Name & #
0	任务加载成功	MAV_MISSION_ACCEPTED	Mission accepted OK		MAV_MISSION_RESULT
- 1	任务加载错误	MAV_MISSION_ERROR	generic error / not accepting mission commands at all right now		
2	坐标系不支持	MAV_MISSION_UNSUPPORTED_FRAME	坐标系不支持		
3	指令不支持	MAV_MISSION_UNSUPPORTED	指令不支持		
4	航路点越界	MAV_MISSION_NO_SPACE	mission item exceeds storage space		
5	非法參数1	MAV_MISSION_INVALID_PARAM1	非法参数1		
6	非法参数2	MAV_MISSION_INVALID_PARAM2	非法参数2		
7	任务拒绝	MAV_MISSION_DENIED	任务拒绝		
8	带参数应答	XY_MISSION_GET_PARA	该字节后包括应答参数	ゼ	

### 云端数据导出格式

	架次编号	起飞场温度	起飞场气压	着陆场温度	着陆场气压	电池编号	起飞重量	时间戳	无人机ID	电池电压	电池电流	电池余量	北向坐标	东向坐标	天向坐标	北向速度	东向速度	天向速度	飞行距离	相对高度	航向
	num_flight	temp_takeoff	temp_takeoff_pa	temp_landing	pre_landing_pa	num_battery	weight_g	time_std_s	id_uav_xyi	voltages	current_battery	battery_remaining	x	у	z	vx	vy	vz	dis_m	relative_alt	hdg
举🌰	201606030108	25.3	101325	23.6	101355	026	17085	32135164	01	44.5	45	78%	50.6	25.1	26.35	1.55	6.33	3.54	3.254	3.25	179.6
	日期 (20160603) +无人机 ID (01) +架 次 (08)			手工输入的	试验场信息			根据时间戳合	并同一时刻数	摇,如果某	<b>!</b> 一时刻有部分数据	8不全则为"空"									